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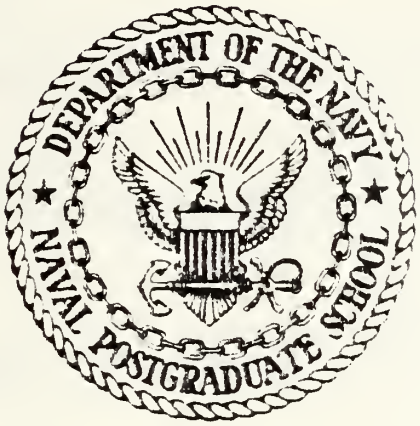

THESIS

EVALUATION OF GRADUATE EDUCATION OF THE
MILITARY PROFESSIONALS AND
ASSESSMENT OF THEIR NEEDS

by

Park, Soon Heon

December 1983

Thesis Advisor: R. A. McGonigal

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(20. ABSTRACT Continued)

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In this regard, this thesis is concerned with (1) whether or not the needs for graduate education were inflated; (2) whether officers so educated were used adequately in positions identified as requiring graduate education; and (3) how we measure the value of graduate education in military officers.

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Evaluation of Graduate Education of the Military Professionals and Assessment of their Needs

by

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Major, Republic of Korea Army
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The military services have been aware of the importance of advanced, formal education since the Korean War(1950-1953). During the past three decades, however, with the philosophy of (1) the fortification of self- defense power, (2) the modernization of the military equipment and (3) the development of defense-industry, there has been a great increase in the need for officers with education at the baccalaureate level and graduate level to prepare them for a extreme variety of roles beyond the traditional professional officer's combat mold.

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I. INTRODUCTION

As long as the ever-standing threats emerge from the communists, a major effort must be directed toward the build-up of national defense preparedness over the next several years in the Korean penisula. As a part of that overall effort, substantial commitment will be made to meet the military's training responsibilities. One way to meet that goal is to improve the quality of military officers by having them educated at the level of under graduate or above.

A. BACKGROUND

Especially, in the past five years, the system of education for military officers in Korea has become a subject of intense interest and concern at all levels of government. Concern about the issues of military education is not an entirely new phenomenon.

During the past decades, graduate education has a decided positive impact on professional competence, prestige, and leadership qualities, while reinforcing civilian control and democratic values. Graduate education is essential to meet the nation's needs for an effective and responsible officer corps comparable to managerial groups in industry and government. It must become an integral part of the professional career.

However, the present system for determining the services' educational needs by a count of existing jobs requiring officers with graduate education has crucial flaws,

including a high rate of attrition of the graduate educated officer.

In any case, the services' targets for educated officers should be integrated with their technological, strategic, and organizational plans. On the occasion of the establishment of the specialized officer for personnel management, the new system should lead to greater effectiveness and flexibility in the assignment and utilization of educated officers.

In reality, no plan can perfectly fit human skills to abstract categories of occupation because manpower planning over-simplifies and distorts the information that individuals need for making choices of careers.

The planning of effective education and careers for officers should be based on what is professionally required of them in a given sphere, i.e. in the organization and security situation to be expected.

Traditionally, we have viewed the public educational system as the means by which the children of the poor can improve their status in life. At least,in the Korean mythology, it has been the mechanism to foster a relatively high degree of upward mobility.

More recently, however, the educational system has been criticized as one of the major institutions by which inequality has been perpetuated.

During the 1970's, the military required increasingly large numbers of officers with graduate degrees to perform tasks growing ever more specialized, due to the advent of economic independence and growth.

With this development came a corresponding responsibility to show that the personnel department could indeed contribute to the military education's "bottom line". Thus, many issues have been raised in this field.

The expansion of higher education in the 1960s and early 1970s led to some countries doubling and others trebling their student enrolment figures for higher education. It also led to increases in the funds and in the personnel allocated to higher education

It is in this context that the problem of efficiency in higher education becomes significant.

In order to achieve the goals of education, educational effectiveness must be a major objective. When economic growth was being emphasized, training manpower as rapidly as possible was considered an educational objective by some people. But just as quality of growth is seen as more important in the 1970s, so effectiveness of education must also be re-emphasized.

An important factor to be taken into account when discussing efficincy in higher education is that demand for higher education continues to increase notwithstanding the fact that in some cases the demand for graduates does not increase at the same rate.

Even though manpower planning is the main arena of struggle between every state and its higher education, we are told that educational policy should be made on the highest political level. Some would say that if policy reflects mainly individual decisions about careers, then the collective needs of society will be overlooked.

Part of this concern is reflected in the assessments of the graduate education system by both the military and

congressional members, while the military defends the system as necessary and points to its efficient management.

Indeed, the arguments for and against the system are well documented. The complexity of the international environment, the changing nature of domestic society, the increasing need for technological sophistication, and retention incentives have been cited as the fundamental rationales for graduate education for professional officers.

In any rate, any assessment of higher education for military officers must come to grips with costs and benefits. On the other hand, the costs of the program, questions regarding its effective utility, and the apparent "ticket-punching" syndrome are generally regarded as principal arguments for limiting graduate education.

B. OBJECTIVES AND METHODOLOGY

Because of the vital role which the officer corps plays in a modern army, the Republic of Korea Army(R.O.K.A) officer corps must be developed to meet requirement in the present environment of rapid technological change, increasing specialization, changing attitudes toward job satisfaction, leadership, discipline, and ever changing quantitative requirements.

This thesis intends to provide insight into the management of the officer corps by tracing the recent history of officer professional development and by providing the guideline of measuring the value of graduate education based on a human resources value model for professional service organizations.

Chapter II discusses, in four parts, the realities and problems faced by the R.O.K.Army. The first part of this

chapter takes up the background and history of officer graduate education as well as current ploicy. The seccnd part of the chapter discusses the corelation between graduate education and the professional's view that such education makes them more competetive and competent. In the third part, the definition of the military profession will be studied. The final portion of the the chapter compare and contrasts the pre-specialized officer personnel management and current system itself.

Chapter III emphasizes the need for graduate education by searching for the histcrical perspectives and deals with the justificatiens for fully-funded programs by finding out where we stand in terms of graduate education of professional officers.

Chapter IV is to examine the impact of graduate education cn the profession and its relationship to society. Then, chapter V which is a main part of thesis develops the guideline of measuring the value of graduate education by introducing the human resources model. Additionally, the methodolcgy of addressing the problem is presented.

The conclusions resulting from the analysis are summarized in chapter VI. In addition, recommendations for guidance to be given to future leaders or how to measure the value of the graduate education are presented.
A glcssary is provided in Appendix A and abbreviations are provided in Appendix B.

II. REALITIES AND PROBLEM

Over the years, there has developed within the Ministry of National Defense(M.N.D.) perhaps the most elaborate and successful system dedicated to the intellectual and professional development of officers of the Armed Forces to be found. Its genesis reveals a composite of separate programs developed and adapted over the years to satisfy specific needs.

We need only to look at the officer corps of the Armed Forces, as they now exist, to be persuaded of the effectiveness of these programs as instruments for the development of professionalism and expertise. The issue, then, in the matter of education of officers for the military services is not one of whether we have the proper programs to achieve desired results. The question, rather, is whether these programs in their present form and as now administratered and managed, are optimal in the presently projected fiscal climate and are adequate to the challenges of the next several years. A quick summary of the background of graduate education and military initiatives is necessary to understand the this thesis's point of inceptions.

A. BRIEF HISTORY OF OFFICER GRADUATE EDUCATION AND RECENT SITUATION

The military services have been aware of the importance of advanced, formal education since the Korean War(1950-1953). During the past three decades, however, with the philosophy of (1) the fortification of self-

defense power, (2) the modernization of the military equipment and (3) the development of defense-industry, there has been a great increase in the need for officers with education at the baccalaureate level and graduate level to prepare them for a extreme variety of roles beyond the traditional professional officer's combat mold.

It was not until 1955 that the ministry of education approved Korean Military Academy(K.M.A) as the institution of a 4-year university which is accredited for the awarding the bachelor of science degree. From that time, the qualification of instructor and professor in K.M.A became a controversial debate throughout the nation. Even though the faculty group consisted of civilian professors and instructors at the beginning, as time went by some of them must be replaced for this duty. Officers will inevitably be chosen because of the special traits of military institutions. Until 1959, the K.M.A. managed officer graduate education by its own standards, without any general military policy and legal procedure. Since 1959, an officer on active duty also can attend civilian universities under the sponsorship of the military depending on their decision without any kind of public educational subsidies[1]

Today, about 5 percent of all officers on active duty hold graduate degrees. Table I shows the number of officers graduated from graduate school from 1956 to 1978. Total numbers of them are 1,808 and losses appeared to be 511. The remarkable fact here is that 33 percentage of the attrition takes places within 3 years after graduation. This means that management for officer after graduation should be revised or reinforced.

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[1]President order No.1530(10 Dec,1959), Military trust education regulation, Ministry of national defense order No.447(30 Jun,1961), Military trust education implimentation specific regulation.

TABLE I

Number of Officer Graduated from Graduate School

Year	Grand Total	Domestic				Overseas				Number of Attrition
		Sub Total	Army	Navy	A.F.	Sub Total	Army	Navy	A.F.	
53-68	813	629	43	105	104	184	111	46	26	420
69	50	32	18	9	5	18	10	2	6	13
70	59	46	32	3	11	13	11	-	2	7
71	76	60	44	5	11	16	9	3	4	14
72	60	50	42	2	6	10	8	2	1	8
73	112	97	77	8	12	15	11	3	1	25
74	95	81	60	5	16	14	9	5	-	8
75	75	62	41	10	11	13	7	4	2	7
76	101	84	49	12	13	17	10	6	1	7
77	133	122	73	11	38	11	7	4	-	2
78	234	216	164	23	29	18	17	-	1	-
Sum	1,808	1,479	1010	193	276	329	210	75	44	511

Source: M.N.D. Military profession education system committee, "Research of military professional procurement" (1979,M.N.D), p. 14

In addition, if we take a look at the distribution by location of education, domestic education takes up 82% by 1479 officers, and overseas education exists for professors or instructors of Army, Navy, and Air Forces Academy. Table II shows the number of each course by degree and its location from 1956 to 1978.

As table II shows below, numbers of holders of Ph.D. degrees are 107(6%) and numbers of Master degrees appeared to be 606(34%). Also, the number of B.S or B.A. degrees and continuation education is 888(49%) and 207(11%) respectively. And if we break this down by major area, natural science takes up 50 percent of the primary courses. Social studies is 31%, and management and language courses are shown as 15% and 4% in turn.

TABLE II

Numbers of Each Courses by Degree and its Location

Classification		Ph.D	Master	B.A/B.S	Continuation	total
	University	10	339	888	85	1,322
	Institution	13	50		94	157
	Subtotal	23	389	888	179	1,479
	U.S. A.	74	195		24	293
	Germany	4	11			15
	Thailand	1	6			7
	Canada	4	1			5
	Other	1	4		4	9
	Subtotal	84	217		207	329
Grand Total		107	606	888	207	
Proportion		6%	34%	49%	11%	100%

Source: M.N.D. Military profession education system committee, "Research of military professional procurement"

At any rate, there are a variety of ways in which a professional military officer can acquire his graduate degree while on active duty. The two primary developmental programs are officer graduate education and professional military educaion.[2] These range from the fully funded program in which the officer attends an accredited civilian institution on a full-time basis to a variety of partially funded and off-duty programs. Up until recently, the number of the officers attending the Naval Post Graduate School at Monterey, California or the Air Forces Institute of Technology at Dayton, Ohio is rapidly increasing. These military institutions are accredited for the awarding of graduate degrees. The concern here is not with cooperative programs at such places as the Army Command and General Staff College , boot-strap programs, or off-duty-time courses.

The concern is with fully funded programs in which the professional officer is assigned to civilian schools by the military service on a full-time instructor because of the magnitude of funds spent by the military services on the officer graduate education.

It is in such a program that the officer becomes immersed in the civilian academic milieu, rarely, if ever, wearing his uniform or becomeing involved in military activities.

The present policy of providing fully funded graduate education to the professional military officer is based on requirements, i.e., validated positions within the various services. Thus, each service assesses its needs, identifies and selects those officers to fill certain positions requiring graduate educations. Professional military schools, particularly at the senior level, are still

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[2]Currently, Korean National Defense College's attendants can receive the Master degree in National Defense.

considered essential to the career. Therefore, the focus of thesis was (1) whether or not the needs for graduate education were inflated; (2) whether officers so educated were used adequately in positions identified as requiring graduate education.

To fully exploit their career potential and to develop their greatest pctential for contributing to the professicn, professicnal officers are expected to proceed through three tiers of professional schools: the first tier-advanced service school; the second tier-command and general staff level; the third tier-senior service school.

Normally graduate education is acquired only incidentally and is tangential to the professional school system or, in some exceptional cases, is substituted for a war college-level school.

However, the professional primarily follows the three-tier system. When the professional officer goes to civilian school for his Master of Arts or Ph.D., he is still expected to complete his professional military schooling.

B. PERCEPTIONS OF GRADUATE EDUCATION

There is a positive correlation graduate education and the professional's view that such education makes them mcre competitive and competent.

In a recent survey of officers who have had graduate education, it was found that over 90% felt that such education made them mcre effective officers [Ref. 1]. This was confirmed in a study of naval officers, Cecil Roy Hurst,Jr. and James Delano Shaddix. According to their research, " There are many reasons why officers seek a graduate education. The reason given by officers mcst

frequently(39.4%) was to remain competive with contemporaries for further assignments and promotions(ticket punching). Significantly fewer officers were of the opinion that the primary reascn for seeking graduate education is to become a more capable officer(26.7%) and to fulfill their educational aspirations(24.4%)." [Ref. 2].

Although there is some relationship between graduate education and second career aspirations, over 95% of the officers surveyed by the Department of Defense intended to remain cn active duty for at last twenty years.

TABLE III

Professional Officers and Graduate Education

Reasons for participation	% choosing this response as most important factors	% including response in their top three reasons
To advance my technical competence in my service job	43	77
To make me competive for promotion	17	72
To prepare me for a second career after leaving service	13	61

Resource:"Officer Graduate Education," p 116.

This observation appears to be confirmed by a recent Department of Defense survey of professional officers and graduate education . The results in response to questions asking reasons for participation in graduate education are shown as Table III above.

Although very little research has been undertaken to identify the impact of civilian graduate education on professional values, it can be argued that education at a postgraduate level has a socializing effect on its participants. There are those who believe that the physical isolation of the services is increasing that the military communities are increasingly looking inward rather than outward to the larger community. Physical isolation can lead to cultural isolation and further, to value isolation.

The opportunity for exposure to the social relativity of values and to values or attitudes at odds with military perspectives is more likely to occur in campus classrooms than in the professional military schools shared by military officers alone.

With few exceptions, schools such as the Naval Post Graduate School and the Air Force Institute of Technology, as well as the highest senior-level schools , can do little to seriously enrich the general accepted ideas of the traditional professional structure.

The exposure to a civilian graduate milieu provides the stimulation motivation, and challenge to professional perspectives and attitudes. It is in the graduate school environment that the officer must seriously assess his own views and those of the profession.

In the next section, the military profession as it relates to education will be examined.

C. THE MILITARY PROFESSION

Education for a profession can be sensibly discussed only in terms of its function in preparing those being educated for roles in that profession. Accordingly, any analysis of military education should begin with a description of the profession of arms and the duties and skills essential to its practioners.

Even though civilian perceptions of the professional officer are not the same as perceptions of the military professional , the military has the same general characteristics as the other professions, namely, a specialized body of knowledge acquired through advanced training and experience, a mutually defined and sustained set of standards, and a sense of group identity and corporateness. Morris Janowitz supported this conception very well. He said that " the new tasks of the military require that the professional officer develop more and more of the skills and orientations common to civilian administrators and civilian leaders. The narrowing difference in skill between military and civilian society is an outgrowth of the increasing concentration of technical specialists in the military [Ref. 3].

In addition, the military profession has several characteristics not shared by such other professions as law, education, or medicine. It is, for example , bureaucratized with a hierarchy of officers and a legally defined structure [Ref. 4], and it is a uniquely public profession marked by its members' commitment to unlimited service, extending to the risk of life itself. These characteristics have important implications for military education, as we shall later see.

The peculiar expertise of the military profession has been defined in various ways. Beside formulation of it as the "management of violence," is Lieutenant General Sir John W.Hackett's (1962) similarly narrow but precise definition: "The ordered application of force in the resolution of a social problem." Colonel G.A. Lincoln has observed that General Hackett's term "force" should be interpreted broadly as "military resources," to include their deterrent and peacekeeping roles [Ref. 5].

Blending these various formulations and interpreting them in the context of the likely national security environment of the 1970s and beyond, we can arrive at a working definition of the expertise which today's and tomorrow's military education system should be principaly devoted to developing, namely, "the management and application of military resources in deterrent, peacekeeping , and combat roles in the context of rapid technological, social, and political change."

This definition of military expertise necessarily implies a broader set of roles for the military officer than has traditionally been expected of him. This set includes (a) helping to define the nature of the nation's security tasks, especially their politicomilitary dimension; (b) applying scientific and technological knowledge to military matters; and (c) training, deploying, and -if necessary- employing the fighting capability of military units in the changing politicomilitary and technological environments.

Rather than focusing exclusively on the narrow aspects of this third and traditional role, the model of an modern major general (or major, for that matter) must not only master the broader dimensions of the third task but also develop a competence in one or both of the other roles. He

must do so that is, if he expects to rise in his profession, for the politicmilitary and scientific-technoloigical dimensions of security problems interact with the narrowly tactical- technical ones in such a complex and continuing way that, if the military man masters only the traditional role, he cannot deal with the modern professions; problems - except at the simplest level.

The distinctive expertise of the military profession is, of course, generated and transmitted by means other than the military's educational system. In particular, the more narrow aspects of military tasks are generally taught in on-the-job or technical school training. While "training' and "education" are not always sharply differentiated activities, it is generally useful to separate them.

Likewise, "training programs are those which develop specific skills and are nonoriented, while education programs tend to be more complex and their learning outcomes to be more general in nature" [Ref. 6].

Masland and Radway(1957) expand this basic distinction by noting that for Americans "We are stressing here the high degree of legitimization of the training function by the military, and this brings us to third general characteristic. Military training programs are highly utilitarian. Professional military men are called on constantly by their superiors, the Bureau of the Budget, the White House, the Congress the need for every unit of instruction, course, or school in terms of direct utilization by the trainee on his subsequent assignment." Programs are designed and justified according to the familiar military formula of "need to know" rather than "nice to know." Another characteristic of military training is its uniformity. Since programs are designed to meet the

requirements of the service rather than the individual, the "standard curriculum" is employed without exception. This means that all trainees or students in a given program are subjected to exactly the same unit of instruction or course, with no deviation according to an individu al's previcus training or experience, and with no "electives" in the curriculm. Those charged with the responsibility of supervising and operating training programs are concerned with large blocks of manpower and with general levels of competence. Once the requirements of a particular prcgram and dthe qualifications of thepersonnel input are determined, the program is designed in a standard form and operated on this basis. The combination of these characteristics produces in military training a distinctive approach. The emphasis on numbers, things, utility, and unifcrmity puts a premium on form and procedure, rather than on the individual instructor, or even on the substance of the program." [Ref. 7].

Likewise, training emphasizes form, procedure, unifcrmity, and immediate utility, whereas education is directed to developing the students' judgement and intellectual growth and to preparing them for the long-ranged future. Though the military school system - and in most cases a single schocl within it - contains training activities, this discussion is primarily focused on educational programs.

In addition to developing professional expertise, the military educational system contributes to building the other characteristics already noted as defining the professicn, namely, a common set of standards, a sense of group identity, and a special commitment.

These indoctrination and socialization functions are, again, not exclusively the province of the educational system, nor even of the school system.

Depending on the particular pattern of his assignments, the young officer may well learn more in military units than in school about the professional code; in particular, his identification with service values and with his colleagues may grow more out of his attendance at schools.

III. ASSESSING REQUIREMENTS AND UTILIZATION

At the heart of the controversy surrounding graduate education for military officers are two closely related questions: (1) Is the system of determining graduate degree requirements valid? : and (2) Are officers with graduate degrees (especially those who are sent to graduate school with full pay and allowances to meet unfilled requirements) given assignments that make adequate use of their education?

A. EVOLUTION OF THE MILITARY SCHOOLING SYSTEM

Although the origins and timing of the transformation of "military officership" from a trade to a profession are obscure, it is clear that by the latter part of the nineteenth century, military professionalism was well advanced both in Europe and America.

For the past 20 years since embarking on the First Five-Year Economic Development Plan in 1962, a comprehensive system of military education was built in the Republic of Korea which not only reflected but further developed and reinforced this burgeoning professionalism [Ref. 8].

In this period, both the Army and the navy constructed a comprehensive system of military schools, with two or three professional levels as well as a precommissioning level- a system which was augmented for a few officers by education in civilian institutions, mainly in scientific and technical subjects.

By the way, in the case of the United States Army, the basic outlines of both the Army's and the Navy's school

systems were largely set by the start of World War I [Ref. 13]. Since then, under the impact of science, technology,and the broadened character of American security problems- there has been evolution of the services' school systems, and an outright revolution within the individual schools and courses.

Though largely isolated from outside political and pedagogical currents, the military schools apparently served the profession and the nation in the years between the world wars. Whenever we comment on the small, prewar American Army's "mysterious" ability to raise, move, and utilize its very large forces in World War II, it is often noted that the role of the soldier in this conflict was not limited by the bounds of the battlefield, nor was his activity directed solely toward the sound of guns. Development of the atomic bomb, mobilization of the nation's manpower, wartime use of industry, diplomatic. association with a score of allies, government of defeated nations, the rebuilding of a ravaged country side, demobilization of a nation at war- all these became the new duties of the man in uniform [Ref. 9].

Consequently, the strength of a nation can never be measured merely in military equipment such as guns, tanks, and ships, etc.. The real influence of a antion in the world is measured by the output of its spiritual, its economic, and its military strength. Likewise, an equally appropriate comment was made by Prime minister Winston Churchill in his address to the US Army General Staff in 1946. According to his address cited in Prudens Futuri, Winston Churchill pinpointed the role of the military education that "...It remains to me a mystery as yet unexplained how the very small staffs which the United States kept during the years of peace were able not only to build up the Army and Air Force units, but also to find the leaders and vast staffs

capable of handling enormous masses and of moving them faster and farther than masses have been moved in war before.... Professional attainment, based upon prolonged and collective study at colleges, rank by rank, age by age- those are title needs of the commands of the future armies and the secret of future victories."[3]

Convinced, along with Churchill, that military schooling contributed to the World War II victory and recognizing the rapid pace of change in the technological and strategic environment confronting the United States after the war, the profession's leaders moved, in the late 1940s-as they have periodically thereafter- to strenghen further the services' educational systems.

For instance, the Army, probably the most "education-minded" of the services, undertook a series of reforms based on major, systemwide studies of military schooling, ranging from the Gerow Board in 1946 (which recommended reshaping the Army's schooling pattern and creation of joint military schools), to the Haines Board of 1966 (which analyzed the Army's entire officer training and education effort in comparison with other services, foreign armies, and industry).

The newly independent Air Force, building upon the base of the flying schools of the old Army Air Corps, created an entire educational and training complex of its own. Alone among the services, it centralized its professional schools and college into a "university" organization, complete with its own institute of technology.

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[3]Cited in George S. Pappas, "Pridens Futuri - The US War College 1901-1967", The Alumni Association of the US Army War College, Carlisle Barracks, Pennsylvania, Walsworth Publishing Company, 1967, pp 137 - 138

Thcugh their acticns were nct so spectacular as the Air Force's innovation, both the Navy and Marine Corps also expanded and strengthened their educational systems.

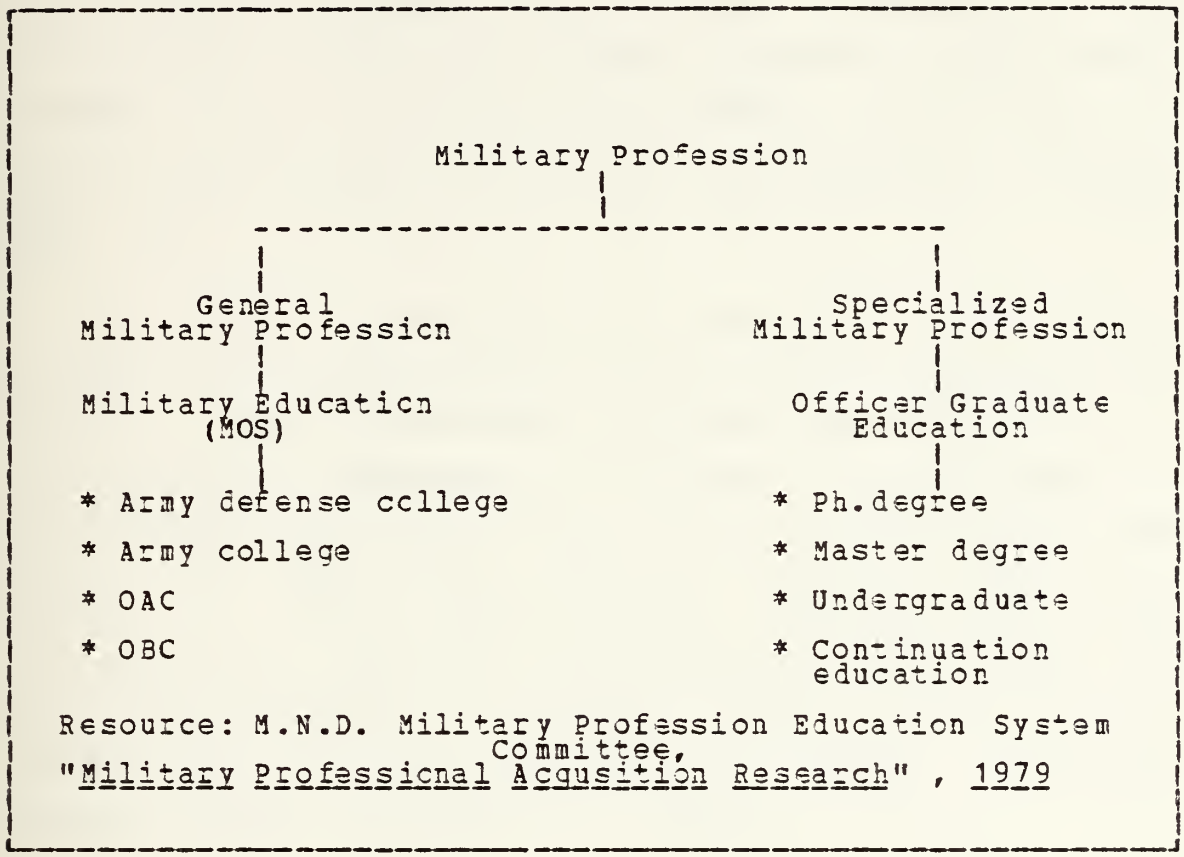

Figure 3.1 Military Professional Education System.

BY the late 1960s the armed forces had become, in Secretary of Defense Cliffcrd's words, "the world's largest educators." The Army alone was operating thirty-seven schools with five hundred separate curricula [Ref. 10]. Another çauge of the scope of the services' educational efforts is the Department of Defense estimate that about forty thcusand resident officer students were enrclled in

service and joint school educational courses in fiscal year 1967.

In addition there were about ten thousand military officers enrolled in postgraduate programs, either in civilian institutions or in the Navy's and Air Force's own equivalent, postgraduate schools. Tens of thousand of other officers were enrolled in off-duty programs and nonresident courses at the various military schools and colleges or through correspondence school centers throughout the world which offer hundreds of college and postgraduate courses [Ref. 11].

Structurally, on the contrary, the services' educational systems in the R.O.K.Army, as they had evolved by the mid-1960s, could be described as a combination of generalist and specialist subsystems, the former category comprising three types- preprofessional, entry, and professional levels- and the latter category consisting of courses offered in both military and civilian educational institutions in managerial, politicomilitary, scientific and technological fields, as well as in more narrowly military subjects such as procurement and intelligence. The entire system is shown in Figure 3. 1 above.

B. NEED FOR GRADUATE EDUCATION

Why graduate civil schooling for officers? Although the practice was begun by the Army shortly after the Korean War with emphasis on scientific and engineering studies, the answer during the past 20 years has hinged on the nature of the profession and assumptions about "changing times."

The peculiar expertise of the military profession has been defined in various ways. Traditional definitions such as Harold Lasswell's familiar "management of violence"

TABLE IV

Education of Administrative and Management Personnel

year	General Administration	Perscnnel Manpcwer	Manpower	Adjustant (ROTC)	Financial Officer
1951	156				192
52	287				101
53	440				30
54					100
55		360			
56		222			
57		245			23
58		236			162
59		104			55
60		99			
61		101	97		
62		150	105		
63		95	103	32	
64		141	101	59	
65		126	68	57	
66		48		45	29
67				51	18
68				92	30
69					15
70					20
71					25
72					15
73					14
74				18	15
75				19	9
SUM	883	1,927	474	373	1,028

Resource: Army Ccnsolidated Administration School

[Ref. 12] became insufficient in the latter 1950s. In the national security environment of the 1960s Amos Jordans's working defifnition was "the management and application of military resources in deterrent, peacekeeping, advisory and combat roles in the context of rapid technological ,social, and political change." [Ref. 13]

This definition of military expertise implied a broader set of roles for the professional military officer than had traditionally been expected of him. The politicomilitary and scientific- technological dimensions of security problems interacted with the narrowly technical ones in such a complex and continuing way that, if the military men were to master only the traditional role, they would not be equal to the increasingly broad range of tasks required of them since 1960.

Throughout the 1960's the nation called upon its military profession to perform an increasingly broad set of tasks. The services translated the call into specifications concerning the nature and level of advanced education their officers would require. As a part of that kind of requirements, the Army consolidated administration school stationed at Sungnam in the vicinity of Seoul in Korea started out the education of administrative and management personnel as shown by Table IV above.

At this time, the U.S.A. had already surpassed that level of achievement(14.8%) many years earlier. Although few in numbers as in Table I, policy makers of Korean military were proud of 112 officers(nearly insignificant level) who received graduate level of education in terms of its infancy period. This fact is evidenced by following table which shows the percent of officers on active duty with degrees. It is necessary that many are "professional" degrees in law,

TABLE V

Percent of Officers on Active Duty with Graduate Degrees

Services	% with "Line" Graduate degree		
	1970	1971	1972
Army	9.3	14.5	14.1
Navy	8.3	13.2	12.5
Air Force	13.8	18.0	16.1
Marines	4.1	5.2	5.5
All services	10.1	14.8	14.8

Source: Office of the Assistant Secertary of Defense (M&R Affairs)

% derived by dividing "Line" degree figures by active duty officer strength for March - April 1973

medicine, etc., and not directly related to the types of education for which positions are "validated" by the services. The term "line degree" is used here to identy those degrees which are required in "validated" positions.

Given the present reductions in force levels due to simplification of administration and a positive correlation between graduate education and retention, one might have expected the percentage degrees to increase in 1973. However, as Table V shows, production figures, i.e., the number of new degrees, fell off from 1970 to 1973. That table also illustrates that the number of validated positions justifying officer input to graduate school declined somewhat during the same period.

Turning to the budget side, the U.S.A. has tried to acquire funds to support rapidly expanding graduate

TABLE VI

Production of Officer and Validated Positions

Services	1970	1971	1972	1973*	1974*
Production					
Army	1,042	775	1,022	1,051	1,039
Navy	790	765	772	814	625
Air Forces	1,377	1,329	1,265	1,147	1,083
Marines	114	85	68	42	40
Total	3,323	2,954	3,127	3,054	2,787
Valid.Pcs.					
Army	6,329	6,329	6,916	7,155	7,278
Navy	5,227	4,637	5,380	5,682	5,950
Air Force	14,191	12,472	11,704	11,754	11,754
Marines	450	468	470	472	485
Total	26,205	24,091	24,470	25,063	25,467

* Information on production for 1973 and 1974 and for validated positions for 1974 is based on projected figures.
Source: OASD (M & R),1973

education based upon these requirements, the services expanded the number of "validated positions" calling for special expertise obtainable through attendance at graduate school. The number of validated positions has almost doubled over the past decade and projections indicate further increases.

For example, excluding medicine the Army alone validated 3,995 positions in 1973(AERB,1972:21).The total number of validated positions for all services in 1973, again excluding medicine, was 25,063 (Army 7155; Air Force 11,754; Navy 5,682; Marines 472) (ODASD(E)).*

However, few have questioned that officers of the Armed Services should be educated to the extent required to carry out assigned tasks in the interests of the security of the

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*1973 Office of the Deputy Assistant Secretary of Defense for Education. Interviews with staff officers.

United States. But serious questions center on the extent and nature of the requirement for graduate education.

How many officers require graduate education? Are graduate degrees requires, and in what disciplines? Where should these degrees be acquired ? To what extent should the costs of graduate education be borne by the government or by the individual officer? In 1969, the General Accounting Office(GAO) examined the fully-funded graduate degree program involving over 4,200 officers at an estimated annual costs of at least $70 million. The result was a 34-page indictment of the services' validation and utilization procedures [Ref. 14].

C. JUSTIFICATIONS FOR FULLY- FUNDED PROGRAMS

1. Demands on the Profession of Arms

At the highest level of generalization, the major controlling factor in determining the educational requirements of the military services into the 1980's is the set of tasks the nation is likely to call upon its military professionals to perform.

The growing complexities of the domestic and international environments will, in Korea's view, cause our national leadership to reinforce President Kennedy's demand in 1962 for professional military advice on the politico-military, sociological, economic, and technical-military dimensions of the nation's security tasks [Ref. 15].

In the past, military professionals have tended to view pessimistically threats to national security(the lowest case syndrome"), to report optimistically on military capabilities to get the job done (the "can do syndrome"),

and to show progress toward achieving objectives by whatever measures their civilian masters establish. But military advice has been neither "good" nor "bad" over time; it has been both.

It is our country's contention that past inadequacies in military advice derived in part from the very lack of sophistication in public policy or marginal and multivariate analysis that advanced civil schooling should provide. The problem, however, does not lie only in the mature of military advice, but in the elected leadership's use of it as well.

It was not, after all, the persistent urgings of a "warrior caste" which took the Republic of Korea partially into the Vietnam involvement in the 1960's, but the sublime optimism of the nation's leadership that Americans could do in Southeast Asia what its sense of mission dictated it should do.

Given the major political decisions that the United States would do certain things in Vietnam, the military profession, perhaps naively, sought to get on with the business at hand- in some cases not fully understanding where it was heading, but never doubting its ability to get there.

One might argue that the nature of military advice could soon enter, if it is not already in, a state of transition- that the "worst case" and "can do" syndromes will pass with the entry of a new breed of officer to high military rank. The nation has yet to realize the full benefits off officer graduate education which mushroomed in the 1960's [Ref. 15].

The captains and majors who went in such large numbers tc civilian graduate schools in the late 1950's and 1960's have yet to move in large numbers into top leadership positions.

One can quantify the monetary costs of having sent them to graduate school, but the potential benefits cf their advice from top-level military positions cannot yet be measured.

What will be the impact of a sizable investment in training these officers in operations research/systems analysis techniques? How much different might be military estimates of "enemy capability" from officers conditioned by graduate schooling tc think in terms of political science treatments of the rational limitations of military force or the econcmics concept of decision-making at the margin?

For the next decade there will also be a continuing, extensive requirement for the professional officer to apply scientific and technclogical knowledge in military matters. The way research and developnment (R&D) is carried out determines the kinds of choices on weapon systems the services have.

These chcices are very significant in establishing ultimate costs of the defense program-R&D, investment, cperating, training, and maintenance. Unit performance of weapons systems has become the focus of attention in military R&D. The aim is to design and deploy fewer ; but superior, weapons systems which can do the job of many clder systems with fewer men. Put simply, there is very indication that more professional military officers must be provided and education in the physical sciences requisite to applying scientific and technclogical knowledge in military matters.

There will be a greater need for officers in military R&D and for officers educated and trained in the principles required for operation and maintenance of highly-scphisticated systems.

What of the set of tasks subsumed by the military adviscry role? If there was anything clear in the Nixon Doctrine, it was that the United States does not intend except for the clearest involvement of vital national interests, to intervene military on behalf of ancther nation. This implies a continued or expanded role fcr Kcrean military advisors and contingency planners. But the age has passed where all military officers can be considered prepared fcr advisory duty after a short course in language and culture.

A key to the effectiveness of the military assistance program will be the expertise of officers serving as advisors and attaches in countries where their performance has psychclogical, political, and social impact. Their facility with languages and knowledge cf cther cultures, as well as the special military expertise they bring to bear, will figure largely in the task of helping cther nations help themselves.

A continued preparedness mission for training, supplying and deploying fighting units must be accepted, although the dimensicns of the task in the post-Vietnam era are uncertain. Commanders and staff officers charged with this mission have responsibilities beyond the imagination of many members of the Congress, most of whom relate to their experience in World War II or Korea War.

So much has changed. Allocating time and scarce resources has become an ever-increasing demand on the commander, requiring ever-greater management expertise.

"Leadership" has taken on new and more demanding dimensions as the full range of society's problems has been brought into the military.

The commander must understand their nature as well as the techniques and resources available for their solutions.

The officer of "From Here to Eternity" would be no more able to cope with today's modern military force than would the corporate "Boss" of the 1930's be able to manage the modern corporation. Just as the proportion of corporate professionals requiring graduate schooling has grown [Ref. 1], so also has the demand for educated military management.

2. Officer Procurement and Retention

Retention of officers whose graduate education has been supported by the government is of critical importance in assessing officer education programs under the microscope of cost-benefit analysis. Assuming greater productivity as a result of graduate education, the longer the officer remains in the service, the greater the returns on the public investment . In terms of the cost-benefit equation, can one assume greater productivity?

Although some of them believe that assumption, it is difficult to make the case for "benefits" in quantitative terms.

A major problem with the cost-benefit criterion is that the costs of graduate civil schooling are paid in the present and most observers tend to look for measurements of benefits in the near term. Business economists abandoned such an unrealistic perspective long ago, looking instead to the long-term returns on investments in human capital.

The human capital theory is used to estimate the value of marginal productivity(VMP) of an individual

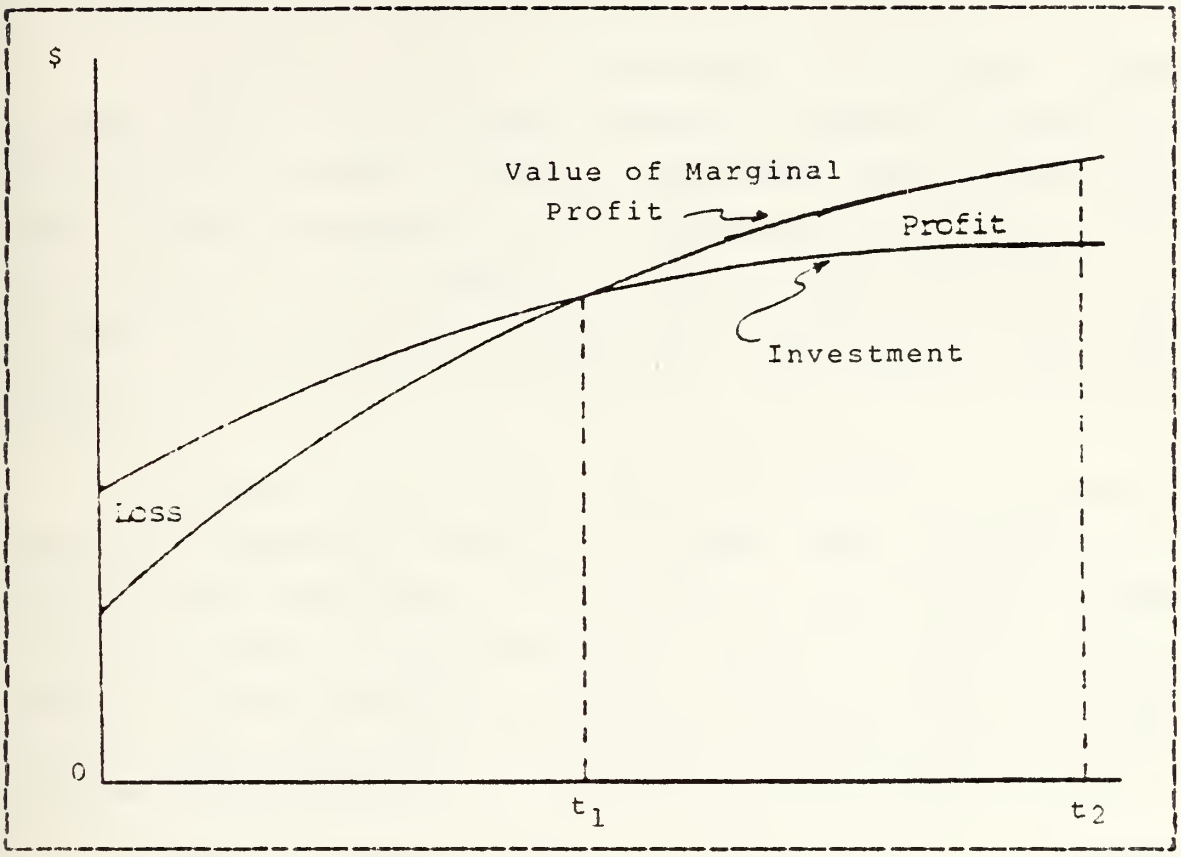

Figure 3.2 The Example of the Human Capital Theory.

training costs and wages. As shown in Figure 3.2, the application of human capital theory implies a negative rate of return exists during the initial training period (time t_0 to t_1).

The investor (in this case , military) will not exceed the "break even" until the individual's VMP rises above the investor's outlays enough to offset the initial period of negative return. In Figure 3.2, the military would have to retain the individual until time t in order to

regain its investment. The longer past t the individual stays in the military, the greater the return for the military, heuristically, the individual's VMP will continue to increase through job experience.

Interviews with executives of four major corporations in 1973 yielded general agreement concerning the positive correlation between advanced degree holders and high performance(resulting in increased return to the corporation), with emphasis on the broadening effect of graduate education. There was general agreement, too, that graduate education is associated with lower personnel turnover.

Although the nature of the military profession precludes measuring benefits derived from education in precisely the same terms, the analogy is quite clear. There is every reason to believe that there is a high rate of return on funds invested in officer graduate civil schooling from the time the officer recieves his graduate degree until he leaves the service.[5]

Prior to 1973, data on the correlation between fully-funded graduate civil schooling and officer retention was scarce and constructed on a relatively narrow base. Nevertheless, the Army, Navy and Air Force had each conducted limited studies indicating a positive correlation between graduate schooling and officer retention. In 1973, the U.S. Department of Defense sought more defintive data on

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[5]Returns should be measured not only in the terms of utilization and reutilization rates in officer validated positions. Criteria should be developed for measuring "social rates of return," with a view toward externalities such as national sense of security, prestige of the military profession, interface with other governmental agencies, and relations with society as whole. All these relations are conceptually understanderable; analyses simply have not progressed far enough in developing models for quantitative measurement.

this correlation. The medium was a random sample survey questionnaire sent to 18,000 officers of the services who had obtained at least a master's degree. The following figure shows the resuls of that studies.

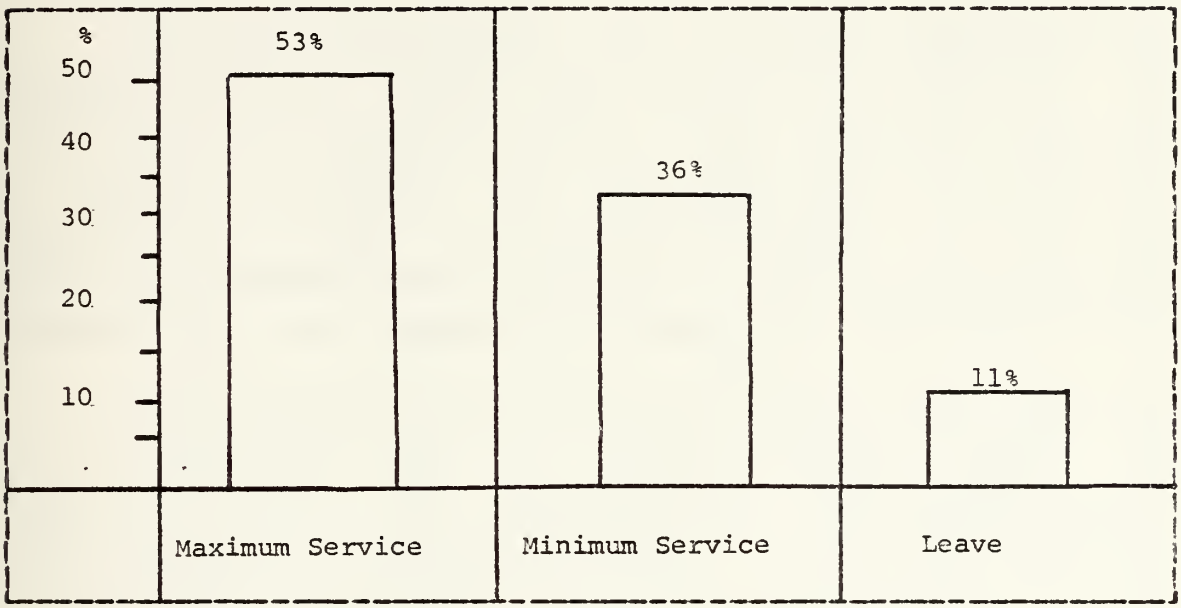

Figure 3.3 Distribution of Attitude of Stay or Leave.

Officers with "professional" degrees(i.e.,chaplains, dentists,doctors , lawyers, etc.) were not included. The sampling plan sought a disproportionately large number of respondents in the lower grades. The response was approximately 70% and usable data base consisted of 11,568 officers. 53% responded that they intend to remain the service as long as possible ; 36% intend to stay for a minimal career and only 11% intend to leave the service before eligible to retire. It appears significant that 93% of the respondents feel that their advanced degrees are useful in making them more effective officers [Ref. 1].

It is clear that the officers responding the OSD survey were motivated positively by graduate civil schooling. This has important implications for the recruitment and retention of quality officers in the Volunteer Forces.

Officer acquisition and retention programs must address two broad problem areas related to education, one quantitative and one qualitative. First, without the offer of graduate education, it may prove very difficult to attract large numbers of "bright" officers. We are in the midst of an "educational explosion" which has significantly upgraded the formal education of American society [Ref. 15].

For example, the West Point Class of 1970 was asked in a survey what was the highest academic degree they expected to earn. The response was: 6.5% baccalaureate; 59.5% master's; 29.5% doctorate; and the remainder, professional. Thus 93.5% of the class expected to go beyond the baccalaureate degree. Thirty-three percent responded that they would leave the armed forces if they could not attend graduate school and 38% said they might leave. The career plans of 71% of the class were related to the opportunity to pursue advanced degrees. The aspirations of cadets in this respect are no different from those of other American students [Ref. 16].

It is important to remember that the services will be competing in the labor market with major corporations-with firms which do offer graduate civil schooling to their young executives. Many of these corporations have a deep commitment to graduate education for both management development and retention.

3. Generalization and Specialization

The extent of a societal trend phasing out the generalist is made explicit by Alvin Toffler. According to Alvin Toffler, "Despite much loose talk about the need for "generalists," there is little evidence that the technology of tomorrow can be run without armies of highly trained specialists.

We are rapidly changing the types of expertise needed. We are demanding more "multispecialists" (men who know one who know one field deeply, but who can cross over into another as well) rather than rigid, "mono-specialists." But we shall continue to need and breed ever more refined work specialists as the technical base of society increases in complexity." [Ref. 17]

Day in day cut, service requirements for graduate education in many diverse specialties will increase greatly in the decade ahead. Even though the government has devoted themselves to diminish the number of officer manpower strength significantly, research, development, and deployment of increasingly sophisticated weapons systems will continue requiring more specialists.

Nonetheless, one looks in vain for significant, concrete examples of contractions in service roles and missions. But, the demands on the expertise of the professional officer under the All volunteer Foeces Systems(AVFS) are likely to be large indeed, either under the AVFS or under conscription system. In either case, by the 1970s, specialization was needed in all staff positions. That is, the generalist could no longer keep abreast with technological advances. At the same time, qualifications for all staff positions were upgraded.

The services have recognized the implications of specialization in recent innovations in specialized personnel for officer management systems which seek to develop specialties at various stages in officers' careers. Yet the budgetary ceilings for officer graduate education recently imposed by Congress do not reflect similar awareness. The reduction in officer strength would appear to suggest that less funding for graduate education will be required. The range of tasks facing a smaller officer corps will require greater expertise than heretofore so more funding for officer education may be needed.

Ironically, the professional military educational system is constructed on the basic premise that the professional officer needs to be more a "generalist" and less a "specialist" as he advances in rank and responsibility. In a superfical way, this may seem to run counter to the arguments for increased specialization made above but the two concepts are not necessarily mutually exclusive.[6]

By "generalist" we do not mean the proverbial "jack of all trades but master of none," but a "specialist" or, in Toffler's words, a "multi-specialist" who can manage the integration of multiple specialties in pursuit of a general objective. This definition, as it applies to officer education, supports idea that "an officer's career initially involves only specialized employment and courses of training in specialized functions; hence the officer is primarily a

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[6]Two broad "levels" of military professionalism are suggested. The first is that in which a technical military specialty is the most demanding element. It is applicable to the officer who is not likely to be called upon to deal with complex politico-military, socio-economic, scientific or managerial implications of policy decisions. The second has to do with the infusion of technical military and related skills into the highest levels of decision-making.

specialist, but he can and should expand his operational and professional basis by extending his knowledge to other specialist fields." [Ref. 18]

While the effects of graduate civil schooling on professional development are most difficult to measure, it can be be argued that officers exposed to the more rigorous modes of graduate-level analysis and new empirical relations have broader perspectives for decision-making. They are better able to understand the implications of decisions by their superiors and the implications of their own decisions upon subordinates and superiors alike. Their perspectives tend to include a sense of historical development in their own specialties, preventing a military proclivity for reinventing the wheel.

Whatever their fields of study, they are better able to understand multivariate analysis and to comprehend the implications of "trade-offs" in decision-making related to almost any task.

Officer professional development is enhanced through graduate education in an additional and very significant way. The traditional professional schooling of an officer, especially at the basic and intermediate levels, is based largely on learning through historical and inductive methodology.

Rarely is the officer encouraged to speculate concerning the future. He is more often taught the wisdom contained in field manuals, technical manuals, current statements of policy, etc., wisdom based heavily on the lessons of the past. Graduate education in civilian institutions, on the other hand, is more likely to teach not only inductive reasoning of mind becomes the basis for innovative thinking which recognizes the limitations of

conventional doctrine applied to environments different from those in which the doctrine was developed. There are encouraging signs, however, in professional military education.

For example, the U.S. Army War College has had a brief sampling of "futuristics" in its core curriculum and in 1974 offered a full course in its elective program.

Analogies to the beneficial effects of graduate education for the professional military officer are to be found in other professions. The education in law traditionally received by most members of Congress has been perceived to be "proper" preparation. Yet it would be just as easy to construct a case to the contrary. Perhaps graduate education in public policy, government, economics, public finance, etc., would be much more appropriate.

However, one could always suggest that for congressmen as well as for professional military officers, the long-term payoff is derived from exposure to rigorous modes of thought.

4. The Value of Academic Credentials

But what about the matter of "credentials" for the professional officer? Does it really make any difference if a degree is bestowed formally so long as the exposure has been achieved? Sixty-eight percent of the officers who have attended graduate school view the degree as an inherent part of a graduate program [Ref. 1].

To the extent that officers will be required to work with their civilian counterparts in official capacities, credentials become and highly respected in the civilian community as credentials-"tickets"-of various descriptions, are important and highly respected in the military community.

There is a marginal difference between "X" number of courses without a degree and "X plus courses with a degree. The marginal difference is determined by the specific requirements of the school at which the officer studies.

Clearly, there are vast differences among the colleges and universities which offer advanced degrees. Some are more demanding than others, and a masters degree may be much more difficult to achieve at one university than at another. This is a fact of life, but hardly a justification for condemning all graduate degrees.

Again by way of analogy, it is also a fact of life that in some Army units in Vietnam silver stars or legions of merit were bestowed more liberally than in others. The standards were different but there is no reason to conclude that everyone who wears those awards has not earned them and that the awards are not generally credible.

IV. THE IMPACT OF GRADUATE EDUCATION ON THE MILITARY PROFESSION AND ITS RELATIONSHIP TO SOCIETY

Up to this point, the author has argued that the concept of purpose and a sense of direction strengthen officer graduate education to meet in changing circumstances. We have seen, to be sure, the difficulties of understanding clearly both a military milieu and its strength and weakness. The action implied by these difficulties has been an objective and alert surveillance of the environment for threats and opportunties and detached appraisal of organizational characteristics in order to identify by distinctive competence. We must acknowledge at this point that there is no way to divorce the decision determining the most sensible economic strategy for a company from the personal values of those who make the choice.

Thus, in assessing the validity of hypotheses set up earlier we need to focus on a number of major factors including the political environment in the international and domestic fields, civil-military relations, the graduate school setting, and the nature of professionalism.

A. THE POLITICAL ENVIRONMENT

There are a number of more or less standard military reasons justifing not only the continuation but the expansion of graduate education for the professional military officer. These range from recruiting and retention incentives to requirements of national security.

There is little question, for example, that the complexity of the international system and national security

requirements in the 1970s require a more sophisticated professional perspective.

Moreover, the increasing use of technology and the sophistication of the battlefield require professional expertise and specialization in the handling of complex military tools taht may be required in future wars.

There is a continuing need to develop intellectual awareness of the political uses of the military instrument. Deterrence, for example, is a concept that is replete with political dimensions. The success of such a policy is based not only on visible military technology, but on the credibility of the decision-making mechanism, the influence of the miltary within the civilian structure, and the political-psychological atmosphere among nations.

Indeed, it is difficult to fully appreciate that successful deterrence means the decreasing likelihood of use of the military instrument. Similarly, limited war considerably diminishes the concept of "victory" in the traditional sense.

Limited war and the war termination strategies in the fragile balance of international forces require a sensitivity to political, military, and economic factors not traditrionally part of the professional military dimension. The use of the military as a political instrument is difficult for military men to accept.

Few commanders, for example, can professionally rationalize limits on engaging the enemy or restrictions on weapons use for the sake of a political advantage.

B. THE NEW AND CHANGING CIVIL-MILITARY PERSPECTIVES

It has become a commonplace to suggest that the United States has entered the post-Vietnam era and now faces a multitude of complex political, social, and economic problems. For the military establishment, this emerging period with its attendant problems has had and continues to have an impact. Furthemore, Robert G. Gard insisted that "Changes within modern Western societies, while by no means uniform, have been so rapid and pronounced that the term social revolution often is used to describe the composite effect. Although it may be too soon to identify longer-term trends with certainty, it seems clear that at least for the immediate future the effects will place the style as well as the functions of the military profession under general attack, as mass media spread these views throughout the social struture." [Ref. 19]

Shorn of its traditional role, placed increasingly in a situation in which its functions and raison d'etre are questioned, the military institution is searching for an acceptable rationale to recreate a legitimate relationship with society.

In the American political system the post-Vietnam era has brought increasing political skepticism and with it anti-establishmentaranism. A national introspection in the face of persistent inflation has developed which relegates international issues and foreign affairs to a secondary position. Some say a semi-isolationism or a new American isolationism has developed.

The military, just emerging out of the chaos of Vietnam, is still viewed with suspicion in such a domestic environment. Moreover, the military finds it increasingly difficult to rationalize its military posture in terms of a foreign threat [Ref. 20].

For the first time in decades the military must not only compete for finances, but also manpower. The military is establishment inconsistently criticized for its view of international relations and its system of education. Critics maintain that the military is overspending and that allocation of resources should go to domestically useful projects. The military's role in policy formulation according to critics must also be reduced.

This has led to reassertion of congressional authority in defense budget-making and a deeper concern for congressional overview of civilian control military men.

A profession that is not politically knowledgeable of the political power environment in which it operates will be readily susceptible to manipulation by other institutions and groups to its own detriment. This political knowledge rests on a deep understanding of our own political system and the relationships with other states.

Graduate education is an important, if not crucial, channel for the development of intellectual skills necessary to deal with the domestic and international environment.

C. PROFESSIONALS, PROFESSIONALISM, AND GRADUATE SCHOOL ENVIRONMENT

The full-time officer in a civilian school graduate program is placed in a milieu in which consciously or unconsciously there is scholarly critique of some of the core values inherent in the military profession. The officer finds himself exposed to a variety of ideas, many of which may be dramatically opposed to those encountered in the military.

Whereas the military world provided an environment in which there was agreement on the value of the military institution and profession, a professional in a graduate environment finds not only disagreement on the basic values of the profession, but a variety of viewpoints concerning purposes of the institution. Indeed, he is exposed to a critique of the very basis of the political system itself.

The officer is also exposed to a variety of intellectual thought processes and engages in intellectual analysis quite different from the technique and procedures experienced at professional military schools. Apart from preparing him to become a member of select group in society, this kind of exposure stimulates the officer to be more critical of the military institution and to look with a more open mind on the whole universe of the military.

In the words of one officer, "It made me move away from the absolutist approach of the military." Or, to put it another way, it created in the officer "a tolerance for ambiguity."

For most officers the graduate school experience creates an awareness of society and reduces the mental boundaries imposed by the military community. It motivates officers to think about the people in society who do not have the kinds of views, perceptions, or professional commitments of the military. The graduate school experience provides for many officers freedom of intellectual inquiry for the first time that not only broadens their mental capacity, but provides a point of view wholly divorced from military considerations. Even more important, it creates a sympathy and even affinity for civilian sectors of society while forging a bond with the academic community.

The graduate experience tends to destroy many stereotypes of civilian society that the military institution perpetuates. The professional finds, for example, that all academics are not the absent-minded, ivory-tower type. They find that not all students smoke pot nor are they extremists and bomb throwers. They learn that many students are seriously concerned about the country and the direction it is going . Indeed , even in the specialist of civilian professional schools he finds a serious concern for the total quality of life.

The officers eventually find that the academic experience affords them the opportunity to appreciate the diversity of commitment, viewpoints, and behavior that are rarely given serious consideration within the military institution. He may even find many of these reasonably stated, rational in their analysis, and difficult to refute.

Conversely, the officer involvement in graduate education destroys some of the stereotypic views of the military held by academicians and university students. These are likely to find that the professional officer is a serious student who, in most instances, will rate in the upper third of the class. Moreover, the academicians and students will find that the professional is not immune from human considerations, nor is he necessarily a warmonger intent on killing. Most academicians and students will find that the professional is not unlike other students whether he be involved in class participation, academic achievement, of human interest.

The injection of new ideas combined with a higher degree of competence in broadened intellectual processes provides a dynamism which the military cannot hope to achieve with purely professional military education. In broader terms,

the graduate school experience provides a bridge by which the military officer as well as the institution can create a better understanding of the military, while providing an opportunity for the military to understand sociery.

Civilian graduate education for the professional officer is not only vitally important to professional dimensions but also with respect to the civic and social contacts within which the professicnal operates. Civilian graduate education whether in the physical sciences of in the social sciences develops in many professional officers a long-lasting linkage with the academic would and a web of personal relaticnships with civilians. These provide alternative sources of information, but also alternative sources of influence on the individual professional. The military in such circumstances does not become the sole supplier of information, contacts, and intellectual process.

D. DUAL PROFESSIONALISM

A unique phenominon is becoming increasingly throughout the profession. This is "dual professionalism" based on the premise that first and foremost the professional military officer, as a servant of the state, is committed to his profession of managing violence.

Thus, as a professional military officer, he is committed to the primary purpose of the profession which involves specialization and expertise. However, the professional military officer spends most of his time in peacetime soldiering, not in war or combat. Even in the Vietnam war many professional officers were doing things more properly called civic action, and a number of other activities had more to do with the political and social system of Vietnam than actual combat with the Viet Cong or North Vietnamese.

Many professional men not only consider themselves professional military officers in the most mundane sense, but also managers, scientists, educators, administrators, writers, and the like. Officers feel that they have another profession within the general framework of the military profession. Given the requirements of the complicated and increasingly specialized environment within which the professional military officer must operate, this is only natural. Dual professionalism demands military expertise but also an expertise in those areas that are closely linked with civilian society.

Parenthetically, it is in "civilian" areas in which the officer may spend the greater part of his career. Graduate education would be a primary means by which this concept of dual professionalism could be developed to a high degree of competence, bringing with it positive spin-offs for the profession and for the society as a whole.

V. HOW TO MEASURE THE VALUE OF GRADUATE EDUCATION

During the past few years, it has been increasingly argued in accounting, economic, managerial, and psychological literature that an organization's failure to account for its human resources can have several adverse consesquences on over-all organizational effectiveness as well as on the effectiveness of human resource management itself.

Flamholtz(1971,1972A,1972B), Lev and Schwartz(1971, 1972) and Morse(1973) are some of the more noteworthy contributors to the field. However, they implied that measuring the value of human resource is an unusally tricky affair. To make matter worse, there is no single model. In this regard, it is not unnecessary that, first of all, this chapter be to present briefly the human resource value models suggested by these authors and then be to propose a human resource value model which builds upon and expands the conceptual framework suggested in these studies.

The objective of the proposed model is to extend and expand the earlier models so a conceptually sound framework for future research and replication can be provided, even though it is not offshoots of eariler studies. Besides, a framework must be developed for the purpose of achieving increased production in any level of military officer.

Recently, R. Lee Brummet, Eric G. Flamholtz, and William C. Pyle have challenged accountants to respond to this need for measures of human resource value [Ref. 21]. They have also emphasized the need to measure human resource value in order to facilitate (1) decision making involving human

resources, and (2) the evaluation of management's utilization of its human resources [Ref. 22].

For example, they point out that proposed investments in training or developing human assets are seldom assessed in terms of a cost-value calculus. In other words, investments are typically made in training production workers and sending managers to executive development programs without a systematic evaluation of the expected benefits to be derived in relation to costs to be incurred [Ref. 25].

Although recognizing the difficulties involved, they suggest that it is important to develop techniques of measuring human resource value in order to facilitate such decisions. Similarly, they agree with Likert and Seashore that "conventional accounting systems fail to provide information to enable management to determine whether investments in human resources are being maintained and effectively utilized [Ref. 21].

A. THE MEASUREMENT OF HUMAN RESOURCE

This section deals with the problem of measuring the value of people to formal organizations. It focuses upon the measurement of an individual's value to a specified organization, and presents a normative model for the economic valuation of individuals. The thesis also examines the practical difficulties involved in operationalizing the normative valution model as well as certain measurement approaches which hold potential for surmounting the difficulties.

The findings of some preliminary empirical research to develop a reliable and valid method of measuring an individual's value are also briefly reviewed. Finally, the implications of measuring and individual's value are explored.

To do this, the individual has been selected as the basic unit of study for two reasons. First, individuals are a central focus for much organizational decision-making, and, accordingly, it is hypothesized that measures of their value will help enhance the effectiveness of such decisions. Typical examples in which the individual is the primary focus are selection, training, allocation(placement), job design, promotion, and compensation decisions. Another reason for focusing upon the value of individuals rather than that of groups is that measures of individual value can, in principle, be aggregated in order to value larger units of people.

On the contrary, it may not be possible to disaggregate the value of entities such as the total human organization, division, plants, depatments, or even work groups into their basic human components, which are individuals. Thus, it is argued that research to measure an individual's value is an essential element, perhaps even a sine qua non, for all work in human resource accounting.

In principle, human resource valuation is appropriate for any individual in any specified organization: factory workers and production foremen; salesmen and sales managers; computer programmers and information system designers; corporate presidents and even accountants. It is appropriate not only in profit-oriented enterprises such as commercial or industrial organizations but also in non-profit oriented organizations, including government, universities, and military organizations.

It is very likely, however, that human resource valuation is most relevant and feasible in such relatively human-resource intensive organizations as aerospace, advertising, consulting, entertainment, C.P.A. firms, and

universities. Human resource valuation is relevent to such organizations because people are, quite literally, one of their most valuable assets. It is also very probably more feasible to measure the value of people in human-capital intensive organizations for reasons which are made explicit in the subsequent discussion.

1. Conceptualization of the Individual Valuation Problem

To understand the problem of individual valuation, it is helpful to imagine a hypothetical experiment in which an individual moves through a set of organizational roles over time.[7]

When we view the individual in terms of his mobility among organizational roles, the determinants of his value to an organization and the major tasks that must be performed by the valuation process are more apparent.

Let us suppose that we are engaged in an experiment in which individuals are moved through a set of mutually exclusive organizational roles or "service states" during a time interval that can be estimated probabilistically.

For a given individual, it is possible to estimate the expected period during which he will remain in, and provide services to the organization. This period is termed his "expected service life." It can be conceived of as a set of time periods, denoted by t, where $t=1,2,\ldots,n$. It is assumed that at any point in time the individual can be found (located) in one state in the set of mutually exclusive "service states" that comprise the organization. A "service state" can be thought of as a position in which an

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[7]A role refers to the set of behaviors expected from all persons occupying a specified position in an organization.

individual is expected to render a specified quantity of services to the organization during a specified time period. In a real organization service states can be identified in terms of "services levels," which correspond to position and salary grade levels and "service groups," which correspond to different degrees of performance(such as average, above average, and below average performance) at a particular service(position) level.

A set of service states at a particular point in time can be represented by a matrix, as shown in Figure 5.1 [Ref. 25].

Service Group / Levels	1	2	3
3	S_{31}	S_{32}	S_{33}
2	S_{21}	S_{22}	S_{23}
1	S_{11}	S_{12}	S_{13}

Figure 5.1 Service State Matrix.

The figure shows that at any specified point in time, an individual can occupy any service state, one of the cells in the service state matrix. For example, one might be in S_{23} (service level 2, group 3) which might corresponded to a middle managerial postional level and high performance at that level.

If time is taken into account as a variable, it is possible to represent an individual's expected services over a specified time period by a three-dimensional model, as shown in Figure 5.2 [Ref. 25].

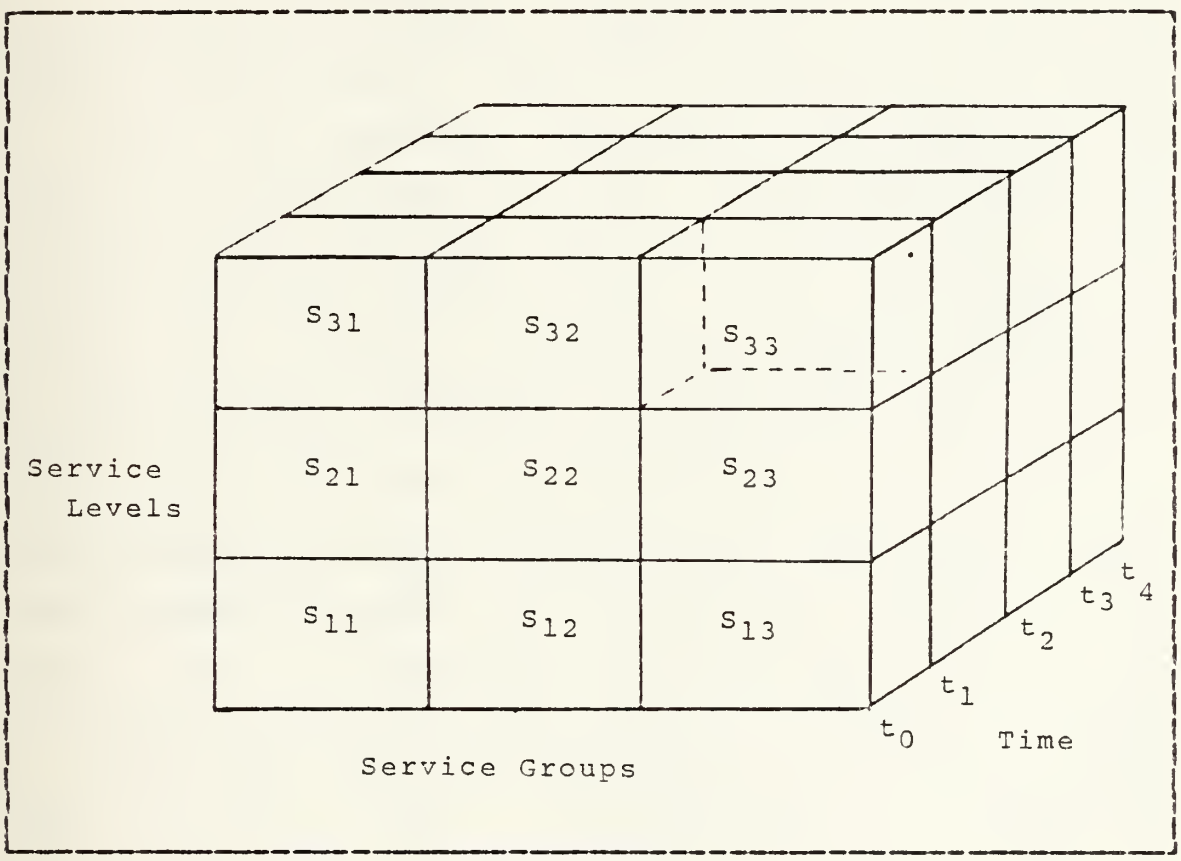


Figure 5.2 A Three-Dimensional Model of a set of SS over time.

In this model each cube represents a quantity of services expected to be derived from an individual who can be located in that service state during a specified time interval, i.e., t_0 (today) to t_1 (one year from now). If an individual is expected to be a member of the organization for n time periods, then we can find his total expected services by locating the service states in which he will be found during each time period contained in this time interval. The sum of these services constitues his total expected services.

In our experiment, the movement of an individual from one state to anctner is referred to as a "transition" between service states. Since it is generally not possible to predict with certainty which state an individual will occupy at a future point in time, we can only estimate the probability that he will occupy each state in the set of mutually exclusive states. Thus, it is not possible to predict with certainty the quantity of service expected to be derived from an individual at a specified point in time. Assume, for example, that an organization is comprised of three possible service states (denoted as S_1, S_2, S_3) and that the probabilities that the individual will occupy each of these respective states in a future time period are (.30), (.50), (.20). If quantities of service are associated with each service state (i.e., 10, 20, 30), then expected service to be derived from that individual is 19 service units. This is the mathematical expectation: $E(S) = (10)(.3) + (20)(.5) + (30)(.2)$ Stated more generally:

$$(1)\quad E(S) = S_1P(S_1) + S_2P(S_2) + S_3P(S_3)$$

$$(2)\quad E(S) = \sum_{i=1}^{n} S_iP(S_i),$$

where S represents the quantity of services expected to be derived in each state and P(S) is the probability that they will be obtained. This means that for a specified future point in time expected services can be estimated as the sum of the products of the service quantity expected to be derived in each possible state multiplied by their respective probabilities of occurrence [Ref. 25].

Our hypothetical mobility experiment is thus a process in which an individual moves through a number of service states and renders a quantity services for the organization. The state occupied and hence the services derived cannot be predicted with certainty, but must be estimated probabilistically.

This suggests that the experiment is essentially a stochastic process with rewards. A "stochastic process" is a natural system that changes in time in accordance with the laws of probability [Ref. 23] Howard has used the analogy of a frog in a lily pond to help clarify the meaning of a stochastic process:

> As time goes by, the frog jumps from one lily pad to another according to his whom of the moment. The state of the system is the number of the pad currently occupied by the frog; the transition is of course his leap [Ref. 24].

In a stochastic process with rewards, "rewards" accrue as the system makes transitions from one state to another over time. The rewards are, in other words, the earnings of the system. They can be measured, as Howard suggests, not only in dollars, but also in voltage levels, units of product procuced or any other physical quanity.

We could, of course, associate rewards with each pad occupied by the frog as he moves through the lily pond. Similarly, as time passes, an individual moves from one service state (position) to another according to the policies and decisions of the organization. The state of the system is the number of the service state (position) currently occupied by the individual; the state transition is the mobility process (transfer among positions or promotion). The state to be occupied at some future point in time depends upon states preciously occupied.

Like our frog who can jump off a lily pad out of the pond, we can in real life terminate our mobility experiment when the individual exits from the organization. Figure 5.3 [Ref. 25] represents the hypothetical mobility experiment as a stochastic process with rewards by means of a three-dimensional model. In this model, each cube[such as the one labeled S_{33} $P(S_{33})$] represents the services (in dollars or other measurement units) expected to be derived by the organization if an individual makes a transition from one service state to another during a time interval, i.e., t_0 to t_1.

It differs from the three-dimensional model shown in Figure 5.2 by taking into account the uncertainty surrounding the realization of services by the organization. It represents "expected" services rather than a conditional quantity of service, where $P(S_{ij})$ is the probablity of real izing the services in state ij.

Several insights can be derived from this conceptualization of the individual valuation problem. The individual is engaged in a process of movement among

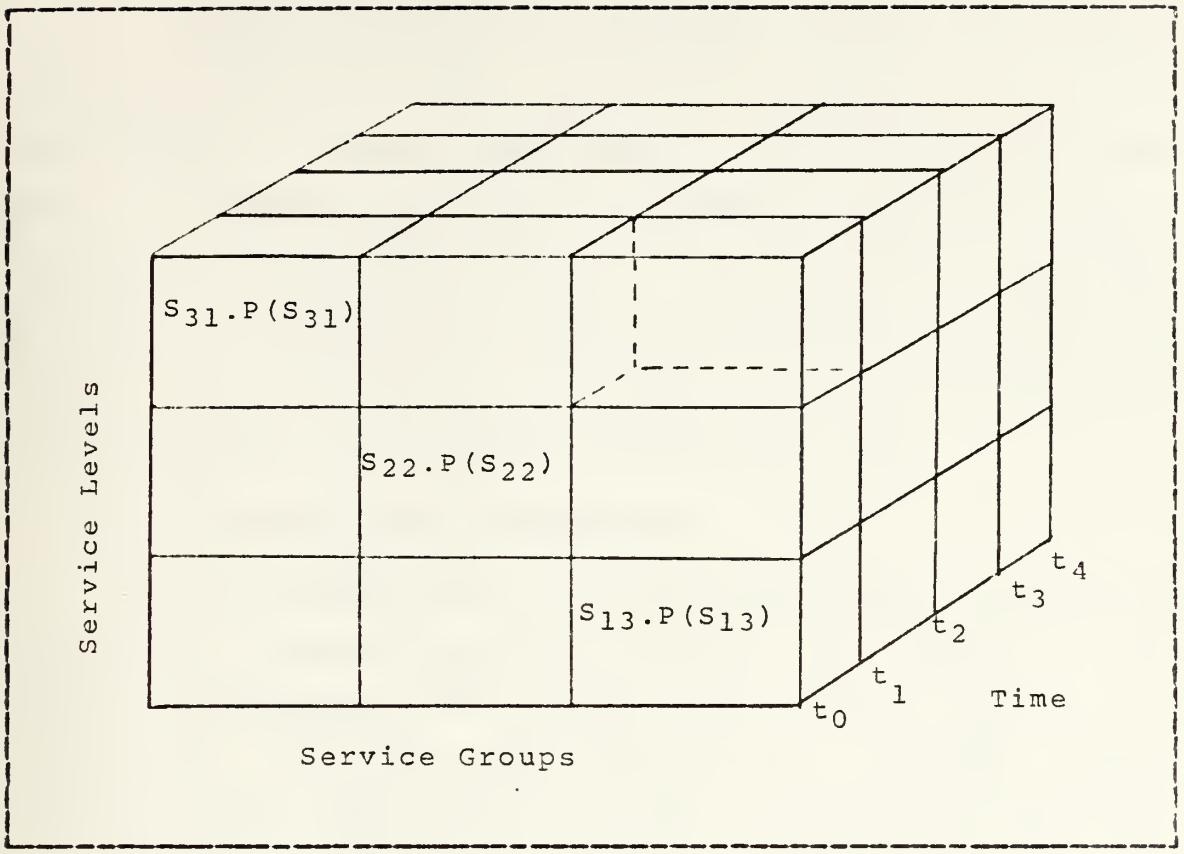


Figure 5.3 A Three-Dimensional Model of a Stochastic Process.

organizational service states through time. The time interval can be estimated probabilistically and is a measure of his service life. If the individual occupies a service state for a specified period of time the organizational derives a specified quantity of services.

Thus, to be able to measure an individual's value to an organization, it is necessary to: 1) estimate the time interval during which the individual is expected to render services for the organization, and 2) measure the services expected to be derived from the individual during this time interval.

As previously noted, services may or may not be stated in monetary terms. Since our objective is monetary valuation, it will be necessary to represent expected services by a monetary equivalent. It will very probably also be necessary to take into account the time value of money by discounting these anticipated future monetary receipts to their present worth. It should be noted that Figure 5.3 represents an individual's expected services as though they were discrete quantities only for convenience in conceptualizing the valuation model [Ref. 25].

2. Limitations and Assumptions

The consideration of the value of human resources as a factor in economic production traces its origins to 18th century economists. This notion was later expanded and evolved into the more specialized study of human capital theory. Within human capital theory, labor may be valued as the amount of capital invested in a worker and the anticipated benefits to be returned to society from that investment.

The quantification and prediction of these values stimulated the interest of accountants and other social science theorists who sought to measure investments in human capital and their implications for formal orgnizations. Becker(1964),Denison(1962),Kendrick(1961) and Likert(1958) investigated the relationship between a firm's investmefnts in the education and training of its work force and employee productivity. They generally concluded that a firm could not disregard the importance of such investments in the generation of income. As human capital theory evolved, the concept of human resource valuation was generated. Successive refinements eventually developed into an area of accounting known as human resource accounting [Ref. 26].

The measurement of the human resources may be classified intc cost-based and value-based measures. Cost-based measures, as presented by Brummet (1969), are concerned primary with the historical costs incurred by an organizatien for the recruting, training, and compensating cf its emplcyees. In the case of the military, to evaluate the Army's investment in an officer for the graduate education, a number cf costs and factors affecting costs had to be measured.

Measuring and evaluating the outcomes of ecucational efforts is a major concern of researchers as well as practicing educators. The use of appropriate measures for comparing various educational methods,curricula, teaching strategies and treatments are only a few of the research questions related.

The high inference, subjective-phenomenological approach to which the tool described here belongs has proved to be sensitive in tapping differences which are extremely difficult tc reach with another approach.

However, there are many limitations inherent in any study invclving perscnnel costs. The most obvious caution to be exerted in such a study is to insure that costs and quantities do not become synonymous with performance and quality. In the field of personnel this is ans especially dangerous ccmparison to make, or even to suggest. It is not difficult tc quantify the number of officers the Army is required to separate each year. It is also not difficult to quantify the number cf officers the Army must procure. By the way, the problem if quantifying the quality of the individual officer becomes very complex and dependent upon many subjective factcrs that have never been quantified.

Additionally, a number of general assumptions must be made. These general assumptions should be kept in mind throughout the study: (1) a discount rate which is generally 10% in the military has not been employed. (2) future pay increases are ignored. While future pay increases can reasonably be expected, it has been ignored due to the fluctuating and uncertain magnitude of any such increases. (3) reserve officers are not included in the study. Although reserve officers are subject to involuntary release to inactive duty resulting from failure of selection for promotion two or more times, this thesis was limited only to active forces. Homeland reserve forces were eliminated from the study because they are subject to separate provisions of the Army regulation.

B. REVIEW OF PREVIOUSLY SUGGESTED HUMAN RESOURCE VALUATION MODEL

The purpose of this section is to review the previous and current research that has been accomplished in the area of human resource value model which Flamholtz, Lev and Scwartz, and Morse had aleady developed, to provide a partial base which can be verified the need for officer graduate education.

As mentioned before, during the past decade, the Army has become increasingly aware of the need to maintain an experienced and highly skilled "career forces". This has been prompted by the ever-increasing rate of technological growth in Army weaponning coupled with rising manpower costs. This reality forces the Army to compete directly with the private sector for the educated career officer military expertive professionals in which a substantial training investment has been .

Unfortuantely, the extent to which the Army is able to compete with the private sector is linked by budget constraint. How do we overcome these barriers?

1. The Flamholtz Studies

In his 1971 study, Flamholtz proposed a normative human resource valuation model which would trace the movement of employee through organizational position of "service states" where the individual employee "... is expected tc render specifed quantity of services to the organization during a specified time period." The probability of the individual occupying these service states is needed that the "expedted service" from the individual can be derived using :

$$E(S) = \sum_{i=1}^{n} S_i P(S_i), \text{----------(1)}$$

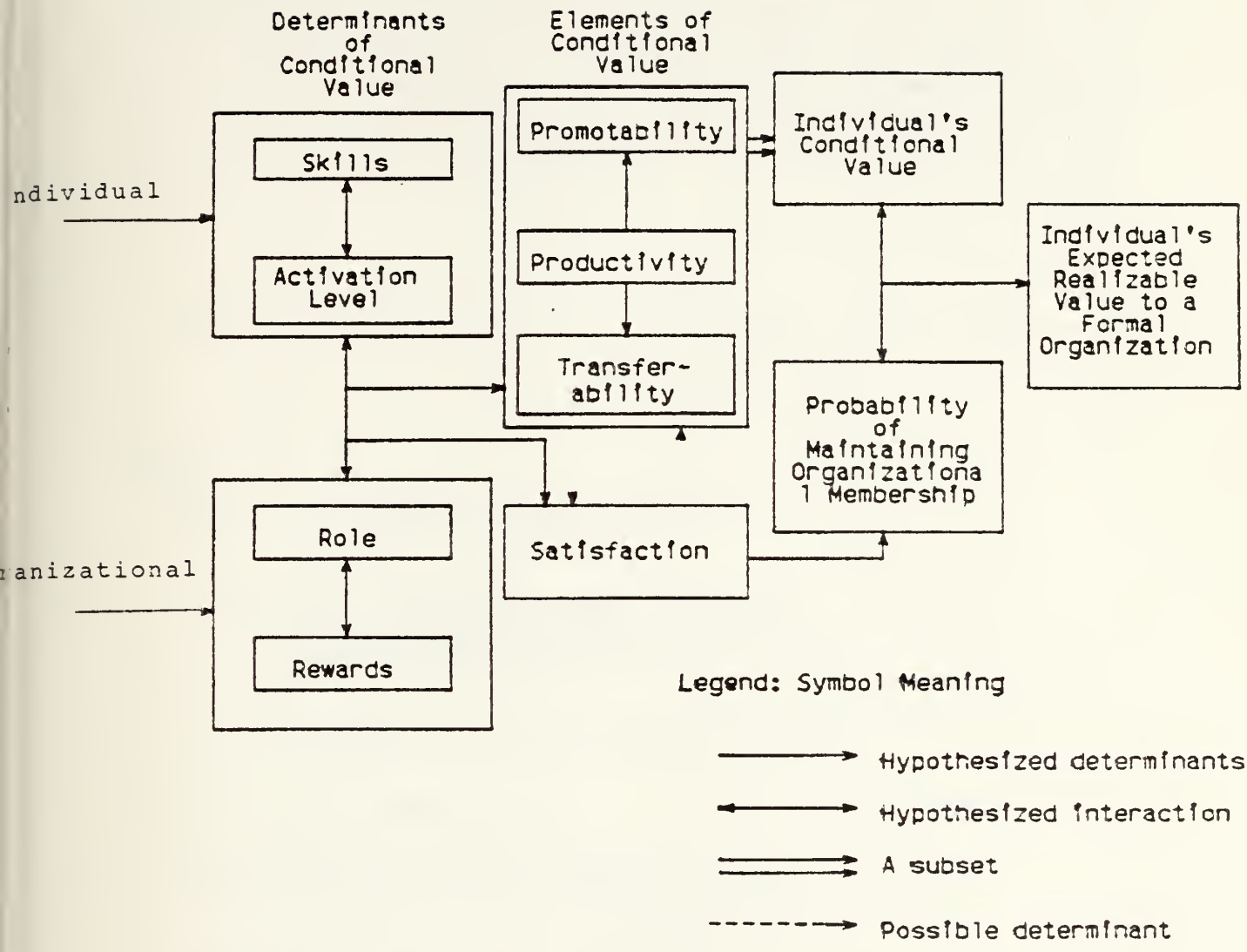
where S is the services that are expected from the individual in each services and P(S) is the probability that the individual wil occupy a particular service state.

The services that the individual render determine his cr her "value" to organization and, according to Flamhcltz the monetary equivalent of the service can be represented in two ways. The firms to determine the quantity and price of services and use their product as the monetary equivalent, and the second is to calculate the inccme expected tc be derived frcm the rendered servcices. The expected services are discounted so taht their present malue can be determined.

A second study by Flamholtz(1972A) offers a model for determining an individual's value to an organization using the present value of the set of futur services the employee is expected to provide during the period he or she

is anticipated to remain in the organization. The model is conceptually sound from a "benefits" point of view and would have left little room for improvement if Flamholtz explicitly had considered the important variable of the cost of the individual to organization. Costs that are incurred for recruiting, training and developing as well as maintaining (salary and wages and, perhaps, retraining costs) are key variables that bear on an individual's value to an organization.

These costs also determine whether a prospective employee will be hired. If the employee is already a member of the organization, the above-mentioned costs play a major role in decisions of critical nature, such as termination retention. In other words, Flamholtz offers the individual's skills and activation level as determinants of conditional value which interact with the individual's probability of maintaining organizational membership. This interaction will determine the individual's expected realizable value to a normal organization. All of these relationships, summerized in Figure 5.4, have required constant readjustment in the structure of military.



Source:Eric Flamholz, "Toward a Theory of Human Resource Value in Formal Organization", The Accounting Review, October, 1972, p 668

Figure 5.4 Model of an Determinants of an Individual's Value

2. The Lev and Schwartz Study

Lev and Schwartz contend in their 1971 study that an individual's economic value is the present worth of his or her earnings over this individual's useful life adjusted for probability of mortality. They offer the following equation which they claim will quantify the expected value of the human capital of an organization:

$$E(V_\gamma^*) = \sum_{t=\gamma}^{T} P(t+1) \sum_{i=\gamma}^{t} \frac{I_i^*}{(1+r)^{t-\gamma}} \quad \text{------ (2)}$$

where:

$E(V_\gamma^*)$ = the human capital value of a person γ years old

$I(t)$ = the person's annual earnings until retirement. This series is represented graphically by the earnings profile.

r = a discount rate specific to the person

T = retirement age

$P_\gamma(t)$ = conditional probability of a person of age γ dying in year t.

$I^*(t) = f\{I^0(t)\}$, $t = \gamma, \ldots\ldots, T$.

Lev and Schwartz assume that the salary (maintenance cost) of the individual measures the individual's contribution to the firm when they state that "the determination of the total value of firm's labor force is a straightforward extension." This approach might have merit from the viewpoint of the individual. However, when

considered from the viewpoint of the organization and its human capital, the approach invites some questions. Discounted earnings streams which are present values of the slaries or wages that will be paid by the organization and received by the individual do not represent the value of human capital to the organization. To use such an approach is tantamount to stating that the value of the human resources of the organization is zero since the present value of costs (salry or wages) will be equal to the present value of human "capital."

3. The Morse Study

In his "A note on the relationship between human assets and human capital"(1973), Morse implicitly attributes the following equation to Flamholtz:

$$A = \sum_{i=1}^{N} \int_{r}^{T} \frac{I_i(t)}{(1+r)^{t-r}}\,dt + \int_{r}^{T} \frac{X(t)}{(1+r)^{t-r}}\,dt \quad ---(3)$$

where:

A=value of human assets to a formal organization;

N=number of individuals currently employed by the organization;

r=current time;

T=higest time at which an individual currently employed leaves the organization;

$I_i(t)$=net value of the services rendered by individual i at time t to the organization, $I_i(t) = G_i(t) - E_i(t)$;

$G_i(t)$=gross value of services rendered by individual i at time t to the organization;

$E_i(t)$ = all direct and indirect compensation given individual i at time t by the organization;

$X(t)$ = value of the services of all individuals currently employed working together in excess of the value of their individual services at time

r = time value of money

Morse then converts the Lev and Schwartz equation, which determines an individual's human capital value under certainty, to:

$$C = \sum_{i=1}^{N} \int_{r}^{T} \frac{E_i(t)}{(1+r)^{t-r}}\, dt \quad \text{-----(4)}$$

which, according to Morse, is the total "...human capital employed in an organization as it exists at time r".

By expanding equation 3 and rearranging terms, the author obtains:

$$A = \sum_{i=1}^{N} \int_{r}^{T} \frac{G_i(t)}{(1+r)^{t-r}}\, dt + \int_{r}^{T} \frac{X(t)}{(1+r)^{t-r}}\, dt$$

$$- \sum_{i=1}^{N} \int_{r}^{T} \frac{E_i(t)}{(1+r)^{t-r}}\, dt \quad \text{-----(5)}$$

Equation 5 states that the present value of human assets equals total present value of human resources less present value of payments to employees.

The studies by Flamholtz, Lev and Schwartz, and Morse provide a useful function by delineating human resource value quantification algorithms and by indicating the general direction in which future research should be conducted. Human resource value assessment efforts are pioneering endeavors undertaken with the purpose of enabling management, the owners and the public to attain agreater degree of understanding about their, more often than not, most important assets; namely, the human resources of organization.[8] As in every pioneering undertaking, there is generally room for improvement which should not lessen the important role of the earlier studies.

Despite a fact that we examined 3 different studies, the problems identified above are not peculiar to the valuation of individuals or even to the valuation of human resources as an aggregrate. Even the model which is proposed in the next section, is in essence, a research paradigm and not a solution to the problems of human resource quantification [Ref. 27].

C. PROPOSITION FOR MEASURING THE VALUE OF GRADUATE EDUCATION

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[8] Flamholtz indicated earlier "... that human resource valuation is most relevant and feasible in such relatively human-resource intensive organizations as aerospace, advertising, consulting, enterainment, C.P.A. firms, and universities. Human resource valuation is relevant to such organizations because people are, quite literally, one of their most valuable(if not the most valuable) assets."

In the proceding section, the three individual studies determined as essential for proposing the absolutive orthodox for measuring the value of graduate education as a part of human resource value. As mentioned earier, there is no standard formula or precise decision rule for measuring the value of human resource , let alone the value of graduate education. However, one technique to help identify situations that should be considered for the model was be developed by Flamholtz.

Actually, in a 2 years, Flamholtz sums up his work in human resource accounting as "the accouting for people as an organizational resource" [Ref. 28]. Naturally, this requires measuring costs associated with these human assets and measuring the economic value of these assets. The "bottom line" of the enterprise is to assist management in planning and controlling the use of these assets, to give a measure of how effectively and efficiently this is being accomplished.

1. The Need for Distinctions

Education at postgraduate level should be of particular interest to military top manager, since they are presently investing in such education. How do they operate at this level either effectively or efficiently? What are the main demand-supply developments in recent years? In any case, the guideline of measuring the value of graduate education should be provided whatever it will be.

In this regard, it is very desirable to look back to Adam Smith's perception. According to Lloyd G. Reynolds, Adam Smith had already pointed out two centries ago in his "The wealth of nation" that the capital stock of a nation consists partly in

> the acquired and useful abilities of all the inhabitants of members of the society. The acquisition of such talents, by the maintenance of the acquirer during his education, study, or apprenticeship, always costing a real expense, which is a capital fixed and realized, as it were, in his person. Those talents, as they make apart of his fortune, so do they likewise of that of the society to which he belongs. The improved dexterity of a workman may be considered in the same light as a machine or instrument of trade which facilitates and abridges labour, and which, though it costs certain expense, repays that expense with a profit[9]

Smith's perception was forgotten by the economists who supported him and the capital concept was narrowed to nonhuman instruments of production. Only in the 1950s did the concept of human capital reappear as an apparently fresh discovery. Its rediscovery was associated with growing interest in the long-term growth of national output [Ref. 29].

No matter how much we are familiar with the human capital, no one has ever seen a unit of human capital, so there is no way of measuring it directly. But if we assume that education and training are worth what they cost, we can use expenditures on them to arrive at an indirect estimate of the human capital stock. The most ambitious study of this kind is by John W. Kendrick.[10]

In this regard, it is important that human resource accounting tools can be employed to estimate the worth of the human assets of educated officer. Flamholtz shows how

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[9]Cited in Lloyd G. Reynolds, "Labor economics and labor relations" 8th edition, Prentice-Hall, Inc., Englewood Cliffs, N.J., 1982, p 109

[10]John W. Kendrick, The formation and stocks of total capital (New York: National Breau of Economic REsearch,1976). Kendrick's estimates of intangible human investment, in addition to education and training costs, include half of medical and health expenditures (the other half being treated as maintenance rather than investment) plus certain costs associated with labor mobility. Education and training costs, however, form about 80 percent of the total

the organization will want to distinguish between orignial and replacement cost for its people [Ref. 28]. Similarly, there should be a distinction between outlay and opportunity costs. Outlay cost is representing the costs of acquiring or replacing a person and the opportunity cost of forgone income that would be incurred during the period of developing replacements is also an element of their replacement value.

To determine their replacement value, it could be necessary to estimate the outlay cost to recruit, hire, and train the acquired organization's existing human assets and bring them to their present level of skill and familiarity with the organization and its operations. One must also distinguish between direct and indirect costs, e.g. the salary of a seaman apprentice and the salary of his leading petty officer who is "breaking him in" to life at sea. Actual costs are best distinquished from standard costs (what costs actually are vice what they should be).

2. Measuring Human Resources

In connection with the concept of a return to education, decisions about how much human capital to acquire are made by individuals, espically military officers and each service's top commanders. Like other investment decisions, these are presumably made with an eye to money returns. Before studying how decisions are made, we must look briefly at the problems involved in estimating the rate of return to education. Therefore, we can estimate a rate of return by comparing the money benefits arising from education with the initial cost of acquiring it. We must distinguish, however, between the rate of return to the individual and the rate of return to society.

By the way, in estimating private returns, we consider only the ccsts and returns to the person being educated. Consider, for example, the return on a four-year college educatiCn. Cn one side, we total up all costs incurred during the four years. The largest cost item, often overlooked , is the cpportunity cost of the student's time--how much cne could have earned during the four years if one had not gcne to college. This concept must not be overlcoked in measuring the human resource value. In general, one of the most applicable devices is the model for measuring original human resource costs by Flamholtz.

According to him, the original cost cf human resources are defined as "the sacrifice that would have to be incurred today to acquire and develops people." [Ref. 28] Major concern in this section will be with the measurement cf the original cost of human resources. Figure 5.5 identifies the two basic elements of original cost, which are acquisition costs and learning costs. Each of these elements has both direct and indirect cost components, as described below.

First, acquisition cost refer to the sacrifice that must be incurred to acquire a new position-holder. They include all of the direct costs of recruitment, selection, hiring, and placement, as well as certain indirect costs. Second, learning cost refer to the sacrifice that must be incurred to train a person and bring him to the level of performance normally expected from an individual in a given positicn. Learning costs are defined operationally as the differential cost incurred until an individual achieves the level of productivity normally expected a given position.

This is useful in better understanding what an organization has actually invested in an individual. There

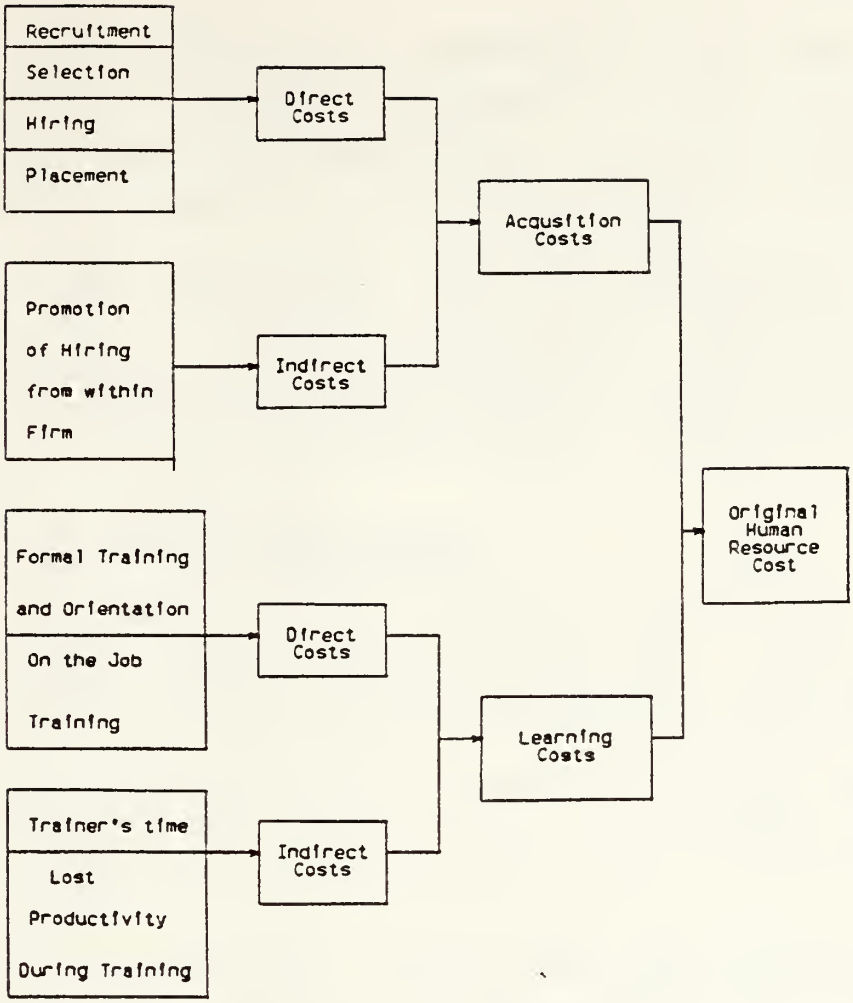

Figure 5.5 Model for Measurement of Original Human Resource Costs.

are, however, additional costs in replacing that individual as may be in Figure 5.6.

Here, the concept of the replacement cost of human resources is defined as the sacrifice that would have to be incurred today to replace human resources presently employed. As shown in Figure 5.6., there are three basic elements of positional replacements: (1) acquisition costs, (2) learning costs, and (3) replacement costs. The first two of these costs have been described previously; the third will be examined below. It is the cost incurred as a result

positicn hclder learning an organization. It may include both direct and indirect components. In principle, the concept cf personal replacement can be extended to individuals , groups, and over the total human organizatien.

a human crganization does not always equal the sum of its parts. A similar observation can be made with individuals comparing their expected and their conditional or possible value to the organization, as mentioned earlier from the very beginning.

3. Guideline for Measurement

The concept cf human values is derieved from general economic value theory. Like all resources, people posses value because they are capable of rendering future services.

Therefore, the value of educated officer, like that of other resources, as the present work of their expected future services.

In this section, major issue is to formulate a equation that identifies the determinants of an individual value. Unlike crther resources, humna beings are not owned by organizations, and hence they are relatively free to either supply or withhold their services. From an crganizatien's view pcint, this means that the probability of realizing an individual's service is typically less than certainty.

This also suggests that there is a dual aspect to an individual's value: (1) the amount the organizatien could potentially realize from his service if he maintains crganizaticnal memberships during the period of his productive service life, and (2) the amount actually expected to be derived, taking into account the person's likelihocd of turnover.

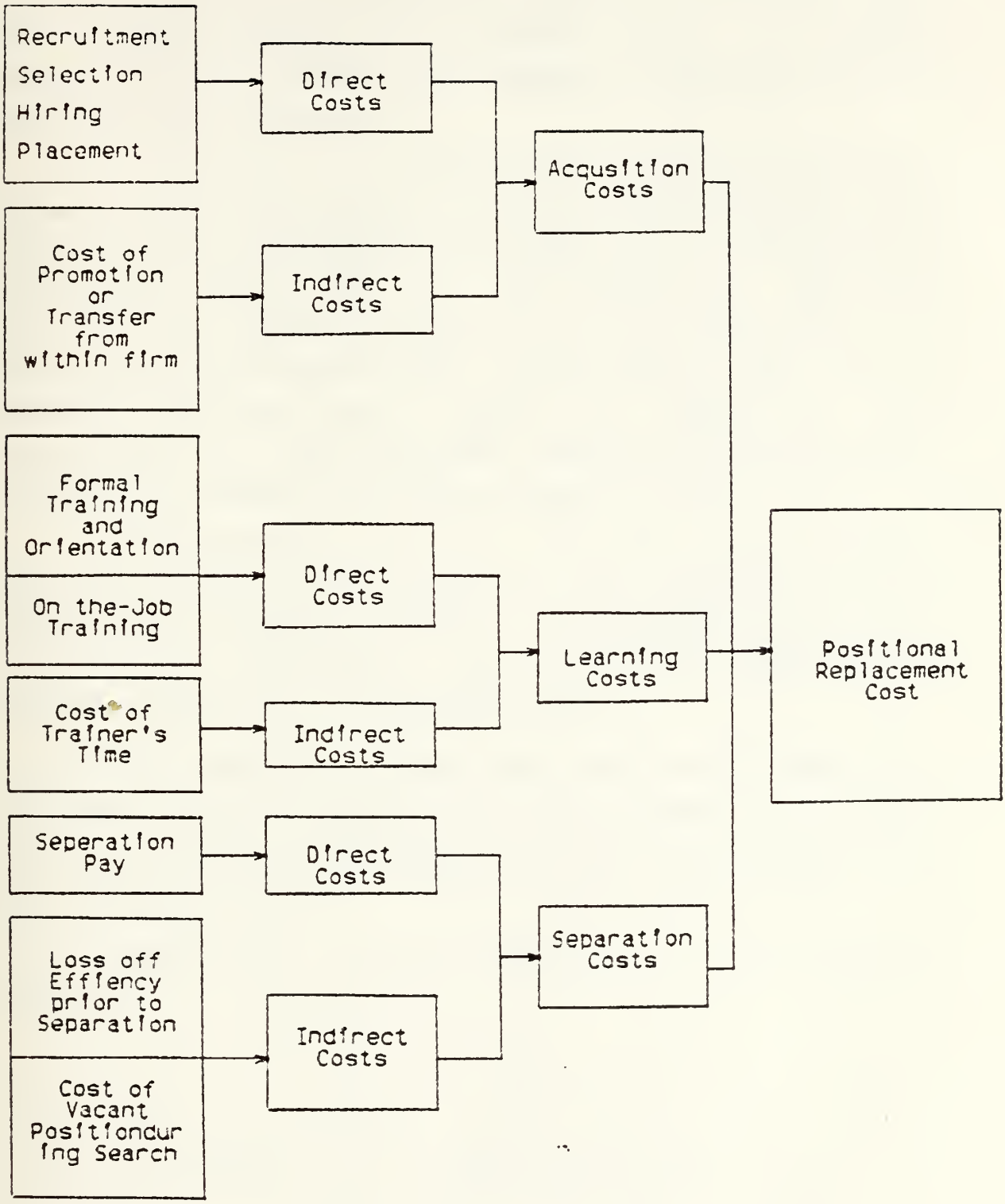

Figure 5.6 Model for Measurement of Human Resource Replacement Costs

The former is the individual's expected conditional value and latter is the person's expected realizable value. The ultimate measure of a person's value is expected realizable value, because this concept is equivalent of its expected future services.

In details, an individual's expected realizable value to an organization is thus multidimensional and comprised of two interacting variables: (1) the individual's conditional value and (2) the probability that the individual will maintain membership in the organization. An individual's conditional value is the present worth of the potential services that could be rendered to the organization, if the individual maintained organizational membership throughout his expected service life.

The probability that the individual will maintain membership in the organization is the complement of the probability of turnover or exit. It determines the extent to which the organization will realize the individual's potential services or conditional value.

The product of these two variables is thus the individual's expected realizable value- the present worth of services actually expected to be derived during the individual's anticipated tenure in the organization, as shown in Figure 5.7.
At the same time, it can symbolically be defines as following:

$$E(RV) = \sum_{i=1}^{n} \frac{\sum_{i=1}^{m} R_1 \cdot P(R_i)}{(1 + r)^t}$$

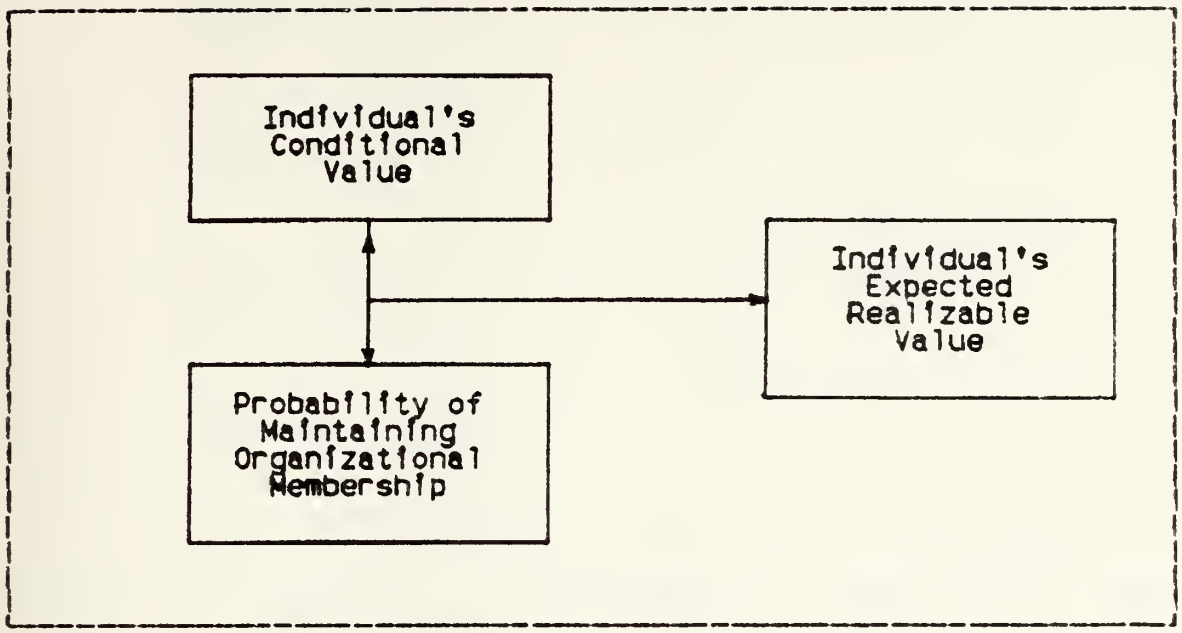

Figure 5.7 Factors Interacting to Produce an Realizable Value.

The important distinction here is in noting how conditional (potential) value is different than expected realizable value. An individual's conditional value is a multidimensional variable comprised of three factors: productivity, transferability, and promotability. Productivity refers to the set of services and individual is expected to provide while occupying his present position. A synonym for productivity is performance. Transferability as the set of services an individual is expected to provide if and when he transfers to other positions at the same position level in a different promotion channel. Promotability represents the set of services the individual is expected to provide if and when he occupies higher-level positions in his present or different promotion channel. Productivity, transferability, and promotability are, in other words, subsets of the "services" the person is expected to render, which are the elements of conditional value, as shown in Figure 5.8 [Ref. 28].

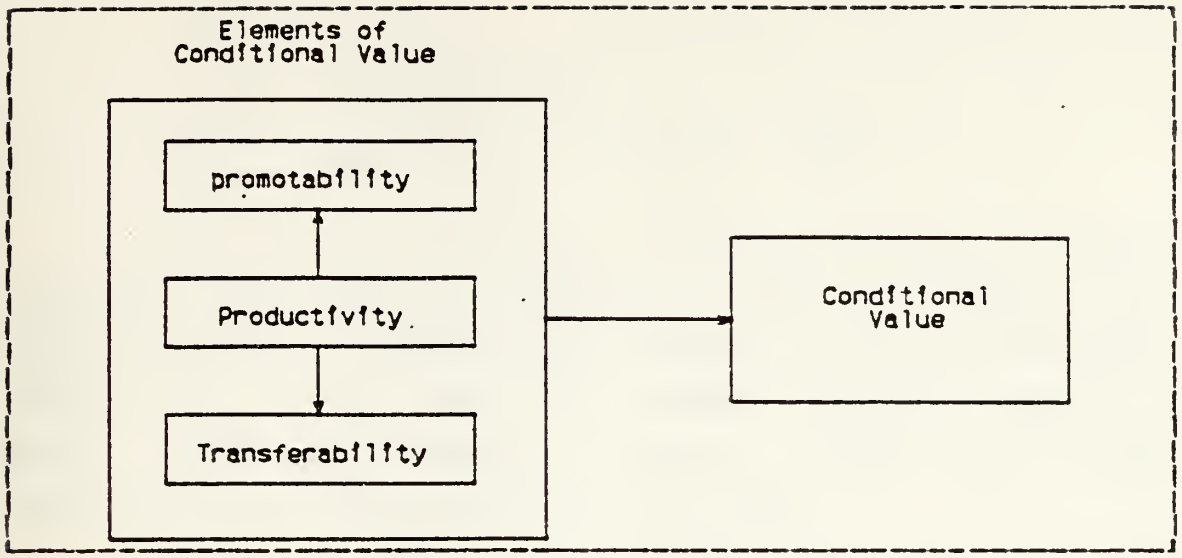

Figure 5.8 Elements of Conditional Value and their Interrelationships.

However, it is often necessary to compute these values in monetary terms. Another manner of symbolizing these relationships is to define a person's expected conditional value as:

$$E(CV) = \sum_{i=1}^{n} \frac{\sum_{i=1}^{m-1} R_i \cdot P(R_i)}{(1 + r)^t}$$

Where $E(CV)$ = expected conditional value

R_i = the value to be derived by the organization in each possible service state i

$P(R_i)$ = the probability that the organization will derive R_i (the probability that a person will occupy state i)

t = time

m = the exit state

$(1+r)^{t}$ = the discount effect for money

By the way, since the objectives of officer graduate education have been developed in order to improve the effectiveness of managerial decision making ultimately, assessments of the value of graduate education using by human resource accounting should provide the sound background and verification for its need.

In this view, one measure of such efficient management is to look at the ratio(coefficent) of conditional value to expected realizable value:

$$\frac{\text{Expected realizable(actual) value}}{\text{Expected conditional(potential) value}}$$

The closer this ratio comes to 1.0, the closer it is to maximum effectiveness. Therefore, when the military policy maker measure the value of the graduate education, they must be able to demonstrate the effects of synergy where they can predict efficiencies of at least 1.0 or above.

VI. SUMMARY AND RECOMMENDATIONS

A. SUMMARY

The ultimate purpcse of this thesis effort was to develop a guideline of measuring the value of graduate education and figure cut the need for it by developing an integrated accounting function which fulfills basic information needs concerning physical, financial, and human resources both internal and external to the organization.

In the pursuit cf these objectives, it is extremly important that retention of educated personnel may be viewed as a function of two sets of fundamental factors: (1) the military demand for educated personnel and (2) the supply of them.

In this thesis, review of earlier studies on human resource value assesment were dealt briefly , and a proposed human resource value model was presented. The contributicns of the earlier studies to the literature are noteworthy because of their important role in formulating and presenting human rescurce value paradigms which provide a formal insight into the concept of an individual's "value" to formal organizaticns.

In addition, the providing the background and testimcny for graduate educatien was to assist the task of officer personnel management in selecting officer for education and assigning the validated positions after graduation.

To do this, any assessment of higher education for military officers must come to grips with costs and benfits.

Therefore, the primary consideration were adjusted to be compatible with the cost-benefit effectiveness, because there is no way of measuring the value of graduate education directly.

Perhaps the major implication is that the concept of human value will inevitably lead to a new paradigm for the management of educated officer. At present, the management of human resources in military organizations is less effective than it might be because it lacks a unifying framework to guide it. Managers have neither a valid criterion to guide decisions affecting people nor a methodology for assessing the anticipated or actual consequences of such decisions.

In todays's rapidly changing complex environment, it is becoming increasingly apparent that the manager must reasses and place a higher value upon his human assets as a condition for improving quality of officer.

As it is now conceived, top military policy maker is unware of the value and contribution of educated officer. In other cases, top military manager has been unable to convince middle and first level officers of the need to more effectively utilize personnel. This failure to effectively place and tap the potential of the educated officer was recently dramatized, at all levels. In today's environment, however, old answers and traditional measures of men are not good enough.

Any change in the officer education system must be based on a comprehensive assessment of the purposes and objectives of the entire system to prevent movement in the wrong direction or hamful missteps in the right direction. Distillation of past experience and/or straight- line projections from military doctrine will continue to form an important part of military schooling.

In conclusion, the services' targets for educated officers should be intergrated with their technological, strategic, and organizational plans.

In this context, the new system should be lead to greater effectiveness and flexibility in the assignment and utilization of educated officers. Also, the present levels of graduate education should maintained by increasing participation in less costly off-duty, degree-completion, and cooperative degree programs to compensate for any reductions in the more costly fully funded programs based upon the coefficient , value of actual human resource value divided by potential human resource value.

B. RECOMMENDATIONS FOR FURTHER STUDY

Although the human resource value model is a useful tool for the measuring the value of graduate education in providing a guideline of evaluation of that education to the extent that it expresses the relative impact of the Army's projected requirement in terms of career management for educated officer, future research is still required, in the sense that organizational structure of military department, which has changed over the year as a result of altered staff configurations, has also been affected by a redefintion of the role and responsibilities of educated officer. Resistance to change will slow the spread of application in practice, but, once any organization restructure its organization, and new relationship are forged, the need for graduate education will prove its value to all personnel in question. The need still exists, however, for a cost effectiveness analysis of graduate education incentives particularly selection elasticities with respect to high attrition rate.

What was not demonstrated was the relative effectiveness of each validated positions compared to validation criteria in deciding the valicated positions in accordance with those holders of graduate education.

Ancther unsclved problem area was the relateve effectiveness of each source compared to the training, salry, and fringe benefit investments in the graduate each source based upon assets.

In cther words, pclicies affecting assets, as well as all cther military members, should be reviewed and revised on a regular basis to ensure that they are: comprehensive, consistent, clearly stated and easily interpreted.

In prindciple, human resource valuation model is appropriate for any individual in any specified organization.

Based cn the preceding analysis and conclusions, the following recommendations fcr future study are offered.

1) There needs tc be a more detailed needs assessment fcr graduate educatiocn in the military.
2) Planning for graduate education needs a complete reccnstruction.
3) A study is needed on how to maintain quality cf education thrcughout these changes.
4) We need to address new ways of managing the program.
5) Criteria need to be established for each validation pcsition.
6) A more effective method is needed to manage the cperating data base.

Finally, either in the past or in many organizations including military today, projects are defined to address a functional area cf the organizations without regard tc the total requirements of the organimzations.

As a result, any military unit , regardless of its size and location, can provide overall direction for total organization before projects are undertaken and therefore avoid the fractonalization of assets and inconsistency of policies in establishing and implementing the new policies even in the officer graduate education.

APPENDIX A
GLOSSARY

Assets-- the number of officers with graduate degree
usable assets-- the number with degrees in fields for which requirements have been formally specified of

Billet-- an officer's job or position

Continuation education-- a brief, often intensive, course of instruction and/or study. A "short course" is isolated of self-contained; i.e., it is not taken as part of a professional qualification, certification, and/or degree

Cooperative degree program-- a program in which officers may study for a graduate degree (normally, a master's) by special arrangement between a service college (such as the Army or Naval War College in the U.S.A. and Korean National Defense College) which officers attend for a year of professional military study and a degree-granting civilian instituion. In addition to their regular military courses, participating officers take special coursed offered by, and recive graduate credit from, the cooperating civilian institution.

Fully funded programs -- those in which officers are sent to graduate school for a period up to three years (the average is 1.5 to 2 years) with salary, tution, travel, family allowances, and other expenses paid.
Officer enroll at a civilian university or one of the two servce schools accredited to award graduate degrees (NPGS at Monterey, CA., and AFIT at Wright-Patterson AF Base, Dayton, Ohio) in an agreed field for which a military requirement has been established

Graduate degree -- a master's or doctor's degree in engineering, the sciences, social sciences, humanities, international affairs, education, management, administration, journalism, and other fields of post baccalaureate study not classified as professional

Individual's expected conditional value -- the amount the organization could potentially realize from his services if he maintains organizational membership during the period of his productive service life.

Individual's expected realizable value -- the amount actually expected to be derived, taking into account the person's likelihood of turnover.

Personal replacement cost -- the sacrifice that would have to be incurred today to replace a person presently employed with a substitute capable of rendering an equivalent set of services

Requirements or "validated" requirements -- the number of officers with graduate education in specified fields needed to fill the number of billets "validated" for officers thus educated. Allowing for various redundancy factors such as assignments to operational or combat units in which few validated billets found, the number of requirements is about double the number of validated billets

Stochastic process -- probabilistic process depending upon prior states of the system

Validated billet -- a position or job designated by a formal process of review as requiring an officer with a specified field

APPENDIX B
ABBREVIATIONS

AERB: Army Educational Requirements Board

AFIT: Air Forces Institution of Technology

AVFS: All Volunteer Forces System

DOD: Department of Defense

GAO: General Accounting Office

JCS: Joint Chief of Staff

KMA: Korean Military Academy

MND: Ministry of Defense

NPGS: Naval Post Graduate School

OASD(M&RA): Office of Assistant Secretary of Defense (Military and Reserve Affairs)

OSD: Office of Secretary of Defense

R&D: Research and Development

ROKA: Republic of Korea Army

VMP: Value of Marginal Product

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